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ARTICLE I. *Cases in Surgery, with Remarks.* By N. R. SMITH, M. D. Professor of Surgery in the University of Maryland.

Amputation of the leg.—Of those amputations which frequently occur, none is so difficult of execution—none so tedious—none so frequently followed by secondary hemorrhage—none so often result in the production of a malformed and irritable stump, as the amputation of the leg. Most of those circumstances which render it so, are sufficiently manifest. In this member are two bones of unequal size, and prismatic in form. The soft parts which envelope them are very unequally disposed around them, and much of the muscular substance is so lodged between them, as to be defended from the direct action of the knife. In whatever mode the member may be amputated, the prismatic form of the bones will cause angles to be presented, which necessarily irritate the soft parts that are closed over them. There is in the leg, also, more fibrous tissue and less cellular substance, than exists in most other members.

In consequence of the difficulties which have been experienced in this operation, the methods practised by different operators have been numerous, and no one of them satisfactory, even to the majority of the profession.

At the present time, the place at which the leg should be amputated (provided choice can be exercised) is by nearly all surgeons asserted to be two or three fingers' breadths below the

tuberority of the tibia. The reasons which determine this selection are:—first, the existence of less fibrous, and more muscular, substance than exist in the lower portion of the leg;. and, 2nd, the comparative convenience of a short stump below the knee.

To me, however, these reasons appear by no means satisfactory, since they give to this amputation too much the character of an operation *par complaisance*, and regard the ultimate convenience of the patient rather than his present comfort and safety. When the section is performed through the most fleshy part of the leg, the amount of pain inflicted by the incisions must manifestly be much greater than when the ankle is selected, not only because of the far greater volume of the parts, but also because those parts are infinitely more sensitive. The fibrous substance which constitutes nearly all the soft parts of the latter region, is known to possess no sensibility which responds to the stimulus of the knife.

The inflammation and constitutional disturbance which immediately result from the operation, must also be in an equal degree more serious, since they are proportioned to the extent of the wound in sensitive parts. Painful spasms of those voluminous muscles from which the flap, or flaps, are obtained for covering the extremity of the stump, are much more liable to result. Suppuration, when it occurs, is much more copious and exhausting. A consideration of not less weight, is the greater liability to the occurrence of secondary bleeding when the incisions are made through parts which possess many muscular arterial branches. I have in more than one instance been under the necessity of opening the wound resulting from an amputation below the knee, for the purpose of arresting hemorrhage which I found to arise from the sural arteries. These are the more prone to bleed, because of the traction which is made by the dressings upon the flaps to cover the face of the stump, and the irritation which is made upon the muscles by the angles of the bones; for any species of irritation may be the cause of secondary bleeding. It is also manifest that when the operation is performed thus high, more blood must necessarily be lost at the moment of the operation—more time must be occupied in the application of ligatures, and more foreign matter, in the shape of ligatures, must be left in the wound.

Certainly, therefore, it must be admitted that the operation is in all respects less formidable when performed nearer to the ankle; and if so, it appears to me that we are scarcely justified

in selecting any other region for the operation, when choice is left to us. An amputation is necessarily always attended with more or less peril to the life of the patient, and the preservation of life should certainly always be the first consideration with the surgeon. Such is sometimes the condition of the patient, that the result of the operation is very doubtful, and then certainly the surgeon should neglect no circumstance which may in the smallest degree contribute to the safety of the individual.

As to the difficulty of effecting union when the flaps are formed of the fibrous substance of the lower region of the leg, I cannot but think it much over-rated. I have experienced but little of this difficulty in those operations which I have executed, either above the ankle, or at the wrist. Some delay in the completion of union would at all events be the worst of the evil. Union once accomplished, the cicatrix of the stump will probably be less sensitive, since it will be less extensive, and the parts will be drawn less tensely over the extremities of the bones.

There is a difficulty, it is true, in adapting to the stump, whether the high or low operation be performed, an artificial member, so that its pressure shall be endured without inconvenience. This difficulty is particularly great, when the patient is one who is compelled to labor, and in such cases, it is usual to apply the artificial member to the knee, thus relinquishing entirely the use of the knee joint. If the artificial member be thus applied, certainly a stump of redundant length is far from being desirable, and in some instances its inconvenience, projecting behind as it does, has even caused the patient to demand, and submit to, another operation at a higher point, as we learn from both Sabatier and Paré.

The history of surgery informs us that Solingen, who was an advocate for the low operation, when practicable, describes, as long ago as 1580, an artificial member so applied to the stump, and imparting its pressure with so little inconvenience, as that the patient could walk nearly as well as with the natural foot. Velpeau also admits the practicability of so adapting an artificial member, that the patient shall walk with but little difficulty, or appearance of deformity. He speaks of two individuals who walked well on imperfect machines.

At all events, it appears to me that we are not justified in

greatly increasing the pains and perils of an operation, already dangerous, for the mere sake of avoiding an inconvenience.

The mode of operating, now most frequently practised upon the leg, (at least in this country, and on the continent of Europe,) appears to be the flap operation, (*methode a lambeaux*,) executed after the method of Lowdham, with a single flap, or that of Vermale, with two. In either case, however, the principal covering of the stump is obtained from the bellies of the grastroenemii muscles, by an oblique incision directed from below upward and forward. The second of these methods is that which I have myself commonly executed, until recently and after having seen reason to be dissatisfied with it.

Objections may be made, it is true, to every operation which can be executed below the knee, and undoubtedly those which obtain against that under consideration are familiar to those who perform it. The rational question is, however, which is least objectionable? The first difficulty which occurs in this method, is that of sustaining the inferior flap in its position against the face of the stump. This must be done by sutures, by adhesive strips, or by bandages—one or all. Sutures are for obvious reasons rarely resorted to. Most surgeons, at the present day, employ adhesive strips, and support them with the bandage. The adhesive strips which are employed for this purpose support the inferior flap by the hold which they take upon the integuments of the superior. The superior flap is necessarily drawn over the sharp angle of the tibia, and although it may be sufficiently long to close over it without any tension, when the lower flap is supported by the hand, yet, when the adhesive strips are applied, such is the weight of the inferior flap and its tendency to retract, that by it the superior flap is drawn with force over the angle of the bone. After having applied the adhesive strips I have sometimes pressed upward, with the hollow of the hand, the inferior flap;—every part of the wound has then been placed at ease; but on removing the hand, the inferior flap has evidently been suspended only by the traction which the strips are observed to make upon the superior flap, a painful tension of which is immediately produced.

It may be said that this can be relieved by the bandage and by the supports which are given to the stump. In a degree it may be accomplished, but not so completely as wholly to obviate the evil. The bandage, indeed, must necessarily in part effect

its object in the same way that the strips do—by the pressure which they make upon the upper part of the leg, although when carefully applied, by no means in the same degree. The support which is given to the lower part of the stump is certainly very important, and never to be neglected; but whoever expects completely to obviate by it the difficulty which I have described, will be disappointed. No permanent support can be given which shall operate like the hand. The pillow, or other soft material which is used, will necessarily change its form, or its position, and whenever the surgeon examines it he will find it necessary to adjust it.

Another very important objection to the method which I am discussing, is the difficulty of effecting union, to any considerable extent, by the first intention. In this mode, we apply the broad muscular surface of the lower flap to the exposed surfaces of the divided bones, and to the small muscles which intervene between the bones. No adequate muscular surface above, therefore, meets, and corresponds to the surface below. We are well aware that union is most easily accomplished when similar tissues meet.

But another evil arising from the form, magnitude and position of the inferior flap, contributes to render union difficult, and to the production of much other mischief. Raised as the flap is, in order to be applied to the stump, its superior surface is necessarily rendered concave; and as by its weight and the inefficiency of its support, it must necessarily bag downward in some degree, a hollow is formed within the wound, opposite to the tibia, for the reception of blood and pus. That which would become the most depending part is thus completely shut up, and no vent given to the fluids which seek to escape. Immediate adhesion of the flap to the face of the tibia is scarcely to be expected, and there pus must of course be deposited, making its difficult way from the wound, if it escape at all, by the lateral angles of the incision. The aponeurotic surfaces which the muscles of the calf of the leg present, cause these fluids to be still more effectually retained. Along these surfaces, also, they are made to infiltrate into the cellular tissue, and to ascend toward the ham, forming sinuses in that region or along the calf of the leg, of an exceedingly troublesome character. I have not long since witnessed this unhappy result of a case in which the operation was executed by myself in this method. I treated the

stump with the utmost care, to prevent infiltration. Sinuses occurred which it was repeatedly necessary to lay open, causing much suffering and exhaustion. The case ultimately terminated fatally, and the result, although the patient was old and feeble, was in my opinion chiefly attributable to the sinusing which took place. This, it is true, might have occurred had another method been practised, but it was the loose lower flap which appeared to receive and retain the pus, and certainly, therefore, it must have assisted to produce the mischief.

Whenever a slough of the integuments covering the angle of the tibia is produced by the traction of the adhesive strips on the upper flap, the means of supporting the inferior flap are greatly impaired, since we have then lost a part of the surface on the anterior part of the leg to which our strips may be applied. If by that time adhesion has not taken place, it then becomes extremely difficulty to maintain the parts in opposition, and the lower flap is liable to fall from the face of the stump, and to present its very extensive surface exposed. Under such circumstances the process of cure is necessarily exceedingly tedious, and the lower flap instead of being a useful covering for the end of the stump becomes now a redundant process of soft parts.

Such are the circumstances which have induced me to abandon the above operation. That which I have since adopted is a modification of that at present performed by Roux, of Paris, and was taught me by my father, the late professor of surgery in Yale College. In this operation, lateral flaps, of nearly equal magnitude, are obtained, and the line of union on the face of the stump is of course vertical.

In executing this operation, I employ a common scalpel of large size. Strong retraction of the integuments being made by the hands of an assistant, and the operator standing on the outside of the limb if it be the left, the inside if the right, applies the point of the middle finger of the left hand, to a point on the posterior part of the leg directly opposite to the shin, and on the middle of the calf; the thumb he applies to a point directly opposite to this, on the shin. At these two points are to be formed the angles of the incisions, and the section of the bones is to be performed ultimately a short distance above them. I now apply the point of the knife to the part on which the finger rests on the back of the limb, and directing the edge of the instrument

obliquely upward and toward the bone, I make a semi-circular incision, the convexity of which presents downward and outward, and the lowest part of which is two inches or more below the level of the two angles already determined. The first stroke of the knife divides merely the integuments; the next, carried close along the upper border of the retracted skin, divides the muscles in the same oblique direction. The hand being now passed over the limb is to be applied to the point where the first incision began, and the second flap is to be formed precisely in the same form as the first, the incision meeting the other at the angle on the shin. The flaps are now to be retracted—the interosseous ligament and muscles are to be divided by the same instrument—the muscles are to be detached for a suitable distance from the bones, and the integuments from the tibia, and the section of the bones is to be performed at the plane indicated above.

We shall thus have obtained two lateral flaps, of nearly equal size, which will also oppose to each other homogeneous surfaces. These may be brought together over the surface of the bones with but little effort, and kept in apposition with but little painful constraint. There is nothing constantly operating, as does gravity in the other case, to separate the flaps. It might be supposed that the extremity of the fibula on the outer side of the leg would seriously irritate the corresponding flap. This I have not observed to be the case, but were it apprehended, the extremity of the fibula might be cut obliquely and a little above the level of the section of the tibia.

The inferior angle of the line of union from this amputation, will necessarily be the most depending part of the stump. Any fluids therefore which may be effused will certainly not accumulate in the wound, but will readily issue from this angle, being conducted by such ligatures as are drawn out at this opening. The closure of the wound by the lateral traction of the adhesive strips, so far from drawing the integuments tensely over the angle of the tibia, will rather relax the skin of this region, and I have thus had no difficulty in preserving the coverings of the bone.

My experience thus far in the use of this method, causes me to decidedly prefer it to any which I have used, or seen employed. It is my design, however, to report the results of such cases as may occur in my practice.

Case of lacerated wound of the thumb;—Re-union of the severed member under unfavorable circumstances.—I was a few days since called in consultation by a medical friend, Dr. Whitridge, to a case in which a frightfully mangled wound of the hand had been inflicted by a large circular saw. The patient was a mechanic of about forty years—a man of tolerable health, and temperate habits. The instrument had struck the thumb on its dorsum, within a third of an inch of the joint of the first phalanx and metacarpal bone, and had completely severed the organ from the hand, with the exception of a small slip of integuments on the side towards the palm. The thumb had dropped upon the palm of the hand—was cold and bloodless. The dorsum of the hand had also suffered much laceration, but the carpal bones were not injured. The wound of the soft parts and bone of the thumb were very rough, and apparently most unfavorable to union. We hesitated a moment whether to attempt the preservation of the member; but as the patient was a mechanic who would have been almost wholly disabled by the loss of the member, we soon determined to attempt its preservation, although entertaining but little hope of final success. We adapted the parts as accurately as possible, and closed the wound by four interrupted sutures, sustaining them with adhesive strips, lint, and a narrow roller.

While we were inserting the sutures, blood sprung from a wounded artery, and it become necessary to apply a ligature. On searching for the bleeding vessel, we were agreeably surprised to discover that the blood flowed from the member below the wound. It was therefore manifest that the digital artery, which courses along the inner border of the thumb just beneath the skin, was included in the integuments which had escaped injury. This circumstance of course gave us new courage in regard to the preservation of the member.

On the fourth day, the dressings being foul with putrid blood and pus, we were obliged to change all except the adhesive strips, which we carefully left. We discovered no evidence of the death of the member, but, on the contrary, there was sensibility along the inner side of the thumb, and warmth in the whole organ. On the second day from this we repeated the dressing, and then removed the adhesive strips, using great care not to disturb the position of the thumb. It was now sufficiently manifest that vitality was preserved in the entire member,

and that union was being effected at several points. The skin on the outer side, below the wound, showed an inflammatory blush, and when I pressed it gently with the point of a probe, I pressed the blood out of the vessels and rendered it pale; but on removing the instrument, the reflux of the blood was instantly seen.

The case has since been progressing favorably. Several small fragments of bone have been discharged; but complete union of the soft parts has been established. But little power of motion has yet been recovered, and it is probable that this will forever remain in some degree defective.

Case of wound of the Liver.—Some surgical writers incline to the belief that wounds of the liver are necessarily fatal, owing to acrid quality of the secretions of the organ which, when the substance of the organ is wounded, must be poured, in greater or less quantity, into the cavity of the abdomen. The following case shows the fallacy of such a conclusion, and exhibits the symptoms which arise from such an injury.

In 1829, I was called in haste to Mr. Richardson, of Old Town, a tavern keeper, who a few minutes before had been stabbed by a maniac, beneath, and a little on the right, of the extremity of the ensiform extremity of the sternum. The instrument with which the injury had been inflicted, was a dagger made from a common table knife by grinding off the back and edge to an acute point. I was associated in the treatment of the case with my friend Prof. Hall. The only examination of the wound which we deemed it prudent to make, was made by introducing a smooth probe into the orifice, and allowing it to penetrate (rather by its own weight than by any force) as far as it would pass. This was about two inches, and it was therefore manifest that, although Mr. R. was somewhat corpulent, the instrument must have penetrated the walls of the abdomen. But in regard to this, the symptoms which had resulted, left no doubt in our minds. The patient's countenance was pallid and anxious—his breathing short and quick—he complained of great pain and sense of fulness and distension in the region of the wound—his pulse was a hundred and forty in the minute, frequent and small. We found him on his bed, but his trunk was supported, almost erect, by pillows, and he found it impossible to recline for a moment, without aggravated pain and difficulty of breathing. It should be remarked that, at the time of the infliction of the wound, the stomach was empty. Had it been

otherwise, it is probable that the stomach, and not the liver, would have been the suffering organ. At it was, there was no vomiting or other symptom particularly affecting the stomach.

At the first moment of our arrival the patient was therefore in no condition for active treatment. Re-action, however, soon occurred in a degree to justify the use of the lancet, and blood was pretty freely taken. An anodyne had been previously administered. In the evening, we found our patient nearly in the same condition, and blood was again taken, and a fomentation applied to the external wound.

On the morning of the second day, other symptoms remaining as before, the skin had assumed very strongly the hue of jaundice, as had also the eyes. There was pain and tenderness in the region of the liver, and there was distressing pain in the right shoulder. Blood was again taken from the arm—a mild aperient prescribed, and the fomentation continued.

On the fourth day, the unpleasant symptoms began to yield, and our patient was soon restored to perfect health.

In this case, the wound having evidently penetrated the cavity of the abdomen, and the instrument being extremely keen, it must have inflicted injury upon some viscus, and the locality and direction of the wound, the stomach being empty and collapsed, would be nearly sufficient to shew that the organ reached must have been the liver. But the jaundice which followed, together with the characteristic pain in the shoulder, dispel all doubt in regard to the nature of injury.

Effects of Strychnine locally applied in Paralysis.—Two years since, a seaman was received into the Baltimore Infirmary, laboring under paralysis of the exterior muscles of the left leg. He stated that, some days before, he had received a blow on the anterior part of the thigh, which had produced contusion and consequent soreness of the muscles. The immediate effects of the injury soon passed away, but there supervened an increasing sense of weakness in the member, which soon terminated in paralysis. The muscles on the anterior part of the thigh now felt soft, relaxed, and flabby. When the patient carefully kept the leg perfectly extended upon the thigh, he was able to bear his weight upon the member; but whenever he flexed it in the slightest degree, in attempting to walk, the leg was instantly doubled under him, and, if he trusted to it for support, he fell. When he was seated in a high chair, and the

leg allowed to hang downward, he had no power to swing it forward.

This man had been laboring under some slight gastric disorder which appropriate remedies had relieved. I could detect no evidence of spinal irritation. The local affection appeared to exist alone. Stimulating frictions were resorted to with but little effect. The cold douche was also tried with as little benefit. I then directed a small blister to be applied upon the anterior part of the thigh, near its middle. When vesication had been produced, the cuticle was removed, and one fourth of a grain of strychnine applied to the denuded surface. This was done in the evening. In the course of that night the patient was waked by involuntary spasmodic twitches of the diseased muscles, occurring at frequent intervals, and rendering it impossible for him to keep the limb quiet in bed. This continued at intervals during the night. In the morning, when the patient rose, he found, to his surprise, that he had now the power of extending the leg upon the thigh, and of securely standing and walking, although the member had not recovered all its natural power. On the following evening I directed the application to be repeated. The same involuntary movements did not recur, but further improvement took place in the contractile power of the muscles. This improvement, without further resort to the remedy, continued to progress, and in a few days the natural strength of the member was perfectly restored.

The result of this case has induced me, in several cases of local palsy, to resort to the same remedy, but I have by no means been equally successful in such. In one case, however, of paralysis of the left arm and fore-arm, partial success was obtained. The same involuntary twitches of the muscles took place in this case, attended with some pain.

Little benefit can be expected from this remedy where organic lesion may be presumed to exist in either the brain or spinal cord. There are undoubtedly cases of paralysis in which, from morbid nutrition, the proximate cause of the disease is located in the muscular fibre, its vital quality of contractility being impaired. It has always appeared to me that pathologists far too generally overlook the susceptibilities of the muscular system. Through the nerves is conveyed the stimulus which excites the muscles to contraction; but in the latter organs there resides the important vital property which responds to the stimulus of the

nerves. I believe that no intelligent physiologist of the present day doubts the existence of a vis insita musculorum; and if the existence of such a quality in the muscles be admitted, diseases of the motive apparatus may certainly arise from one of two sources. Either the stimulus conveyed by the nerves may be morbid or deficient, or the contractility of the muscles may be morbidly modified. This property of the muscles is bestowed upon these organs by the exercise of healthy nutrition, and if, in consequence of defective nutrition, the contractility of certain muscles ceases to be conferred upon them, paralysis will as certainly follow as if the nerve, which stimulates those muscles, had been divided. The nerves would stimulate as ineffectually a muscle deprived of its peculiar vital property, as they would cellular tissue, or a ligament. The strychnine in those cases in which it is successfully employed probably influences powerfully the contractility of the muscles, and undoubtedly was beneficial in the case which I have related by aiding to restore that quality.

On the inverted Toe-nail.—Although at first thought, this disease may appear to be one of trivial character, and although it is one which never threatens life, yet I know of but few which create a greater amount of suffering—so frequently does it occur, and so severe is the distress which it often occasions. I have, indeed, in some instances, known it to be attended with such extreme irritation as to seriously impair the general health; and I have known amputation to be improperly resorted to for its relief.

Those writers who have noticed this disease have uniformly described it as an actual inversion and growing downward of the margin of the toe-nail. Having noticed carefully, in my own person, the causes which produce the disease, and the mode of its production, I am satisfied that the commonly-received explanation is erroneous.

These diseases would never occur to those who wore neither boots, shoes, nor stockings. Indeed it never occurs to the negroes of this section of the country, who generally wear no shoes except during the winter season. The shoe or boot, then, (but sometimes the stocking) is the remote mechanical cause of it. The mode in which it operates is this:—the shoe, being, as it usually is, too narrow to allow the anterior part of the foot to expand when it receives the weight of the body; or the heel of

the shoe being so high as to cause the foot to be thrust forward into the narrow part of it, the toes are cramped and compressed upon each other. The great toe particularly, receiving the greatest pressure, is forced outward and against the second toe, and is made partly to mount upon it. The second toe, being smaller, presses not directly against the side of the large one, but partly under it, pushing the soft parts upward, and doubling them over the outer edge of the nail. A species of inflammatory hypertrophy takes place in the extremity of the toe from the continued irritation of the nail; and the soft parts, which are thus reflected over its border become more voluminous than natural. I have often thus seen it doubled quite over to the middle of the top of the nail. The end of the toe itself also becomes permanently swelled and expanded, and rises anterior to the angle of the nail. The pressure of the shoe on the top of the nail, no doubt assists in some degree the production of the disease.

Very rarely does the disease occur at the inner margin of the nail, as it certainly would as frequently do, if the common explanation of the production of the disease were correct. When it does there occur, I am confident that it arises from the soft parts being pressed upwards from below, and the nail being resisted above.

When the flesh is pressed upon the edge of the nail, ulceration will necessarily result, and pus is secreted. Occasionally blood flows. Redundant spongy and irritable granulations occur and increase the tumor of the parts, which rise above the margin of the nail and give to it the appearance of having grown into the flesh, and of being deeply buried in it.

The elastic pressure of the stocking more frequently inflicts injury upon the toes than is generally supposed. The material is so soft and yielding, that few suspect the evils of tight stockings as well as of tight shoes. The continued pressure of a substance as soft even as the texture of a stocking, is capable of greatly modifying the form of parts. I was not long since consulted in a case of dislocation of the lower jaw, in which the character of the injury not being recognized, no reduction had been effected. The displacement had existed nearly a year. Surgeons are aware how difficult it is for the patient, after dislocation of the jaw, to close the mouth, and retain the saliva, even when inflammation has passed away. Strong contraction

of the lower part of the orbicularis is produced for this purpose, and almost continued pressure is made upon the lower incisor teeth. In this case, by the pressure thus made, the teeth, which before had been natural and strong, were thrown horizontally backward into the mouth.

Upon one occasion, when suffering in my own person from the irritation of the inverted toe-nail, I changed my shoes for those which were abundantly wide at the toe, but still I felt the same painful compression of the toes, when standing or walking. Further attention to the cause shewed that it was the continued pressure of the elastic stocking.

For want of proper attention to the cause, as I believe, the surgeon is often long baffled in the treatment of this disease. So often are the ordinary means defeated, that Dupuytren has recommended and practised an operation of great severity for its radical cure. He thrusts the blade of a pair of scissors beneath the anterior margin of the nail, near its centre, and carrying it parallel to the lateral border, reaches the root. He then divides the nail, and seizing the portion concerned in the disease with forceps, tears it away. This is said by the surgeon not to be particularly painful, but I think it will require more than the assurance of the operator to convince us that it is not agonizing. Such an operation will undoubtedly be effectual, but besides its cruelty, it impairs the integrity of the member. The toe-nail is by no means a superfluous appendage, and therefore it is desirable to preserve it.

In the treatment of this affection, let the surgeon first carefully consider the cause, and endeavor to effect its removal. This I have accomplished by interposing between the toes, at their roots, a cylinder of soft, rolled linen—perhaps a third of an inch in diameter, or as large as may be necessary to keep the extremities of the toes from pressing upon each other. A shoe is to be worn which shall give abundant room for the toes to expand, but furnish snug support to the instep; for a shoe which is altogether loose upon the foot, will allow the toes to be pushed forward upon the toe of the shoe. The patient must also wear stockings which shall not in the slightest degree compress the toes. If the disease be not far advanced, the parts being relieved of the cause, will soon spontaneously assume their healthy condition. But if there be morbid granulations rising, in which the border of the nail is buried, and this last appears to be creat-

ing great irritation, it is necessary to gently raise the border of the nail by seizing the corresponding anterior angle with forceps, and then, with delicate scissors, the free lateral margin which will be found macerated, white, soft, and brittle, should be cut away. To the granulations the nitrate of silver may be applied. The toe-nail should now be scraped thin upon its dorsum, and the patient should be directed every day to lift the border of the nail. I have found no advantage in thrusting anything under the nail to keep it raised, but have seen such substance cause much irritation.

In confirmation of the correctness of our pathology and treatment of this distressing affection, I may add that, when patients laboring under it are by other disease confined to their beds, without wearing stockings, the disease invariably disappears, and does not recur until they have been for some time on their feet.

ART. II. *Case of Fracture of the Spine.* By FRANCIS M. ROBERTSON, M.D. of Augusta, Georgia.

ON the 6th of October, 1834, at four o'clock, P.M. I was called in haste to visit a negro man, aged between thirty-five and forty, affected with complete paralysis, and insensibility of every part of the body, excepting that portion, above a line drawn around the neck, just on a level with the clavicles, and a small part of the tip of each shoulder. Respiration was carried on entirely by the diaphragm, though calm and regular;—countenance serene; voice unaltered; and mental faculties perfect. On inquiry I found that he had fallen through a dray, while the horse was in a slow walk, and in descending, the back of his neck struck one of the cross bars of the dray, which afterwards passed over him without injuring any other part of the body. The penis was perfectly erect. No external injury could be observed on the back of the neck, or any depression in that region. He complained of severe pain whenever his head was moved, or he was brought into the sitting posture. The paralysis and insensibility were complete from the moment he was taken up. In whatever position his hands or feet were placed, they remained as though they belonged to a dead subject rather than a living being; and his skin, in every

part below the line above mentioned, might be punctured until the blood flowed, without producing the slightest pain or sensation whatever. Although his legs were completely extended, he imagined that they were drawn up, and would continually cry out to have them extended. The pulse was oppressed. He was suffered to remain quiet until nine o'clock, at which time I again visited him. During my absence, contrary to my directions, but at his request, the nurse had suffered him to be turned on his abdomen, which was nearly fatal to him before they could get him back to his former position, in consequence of impeding the motions of the diaphragm, by which respiration was alone maintained. Reaction had taken place, and his pulse was full and bounding,—v. s. 24 ʒ. and a cathartic administered.

7th—eight o'clock A. M. No alteration; paralysis and insensibility the same; penis still erect; passed neither urine or fœces during the night; the region above the pubis does not appear to be at all distended, consequently I did not introduce the catheter. Ordered an enema of salt and water.

Twelve o'clock, M. The enema produced a copious passage, which came away involuntarily, without the patient having the slightest knowledge of the fact; penis still erect; passed no urine yet; region above the pubis not distended. Pulse has become more full and incompressible.—V. S. 16 ʒ.

Applied the vegetable caustic as nearly over the fourth and fifth vertebræ as could be ascertained. He complains of severe pain at this part of the neck when his head is moved in the slightest degree. *Quarter before four*, P. M. Condition unaltered—complains of the caustic, which was applied just above the line of separation between the sensible and insensible parts. Introduced the catheter, and turned him on his side, but no urine flowed; a few drops merely following the instrument when withdrawn. The operation was repeated, but with the same result. He experienced no pain whatever on the introduction of the instrument, and observed that he was entirely unconscious of what I was doing.

Nine o'clock, P. M.—Pulse much weaker, and breathing rather spasmodic. Complains of a continual fainty sensation; desires to be taken into the open air, and makes the nurse fan him incessantly; body and extremities quite warm; penis still erect. Introduced the catheter again, and about an ounce of urine, of

the natural color, came away. The patient continued to sink, and expired at 1 o'clock on the same night, having survived 33 hours from the time he received the injury. His intellect was unaltered to the last.

Examination of the body ten hours after death.—When the subject was turned on the abdomen, preparatory to commencing the examination, about a pint of florid blood and water came from the mouth. The integuments over the back of the neck appeared perfectly sound, with the exception of the eschar produced by the caustic. On cutting down to the muscles, they were found to be much contused, and even lacerated in some places. A large quantity of black blood flowed from the part. On cutting down to the vertebræ, the spinous process of the fourth was found broken off from the body. It was separated from the fifth, and driven to the right side, showing a dislocation and complete rupture of the posterior ligaments. The index finger could be easily passed into the opening between the two vertebræ, and the spinal marrow felt. A profuse flow of black blood took place from this opening, and continued to trickle away for some time after the wound was stitched up. The dissection was carried no further, as the examination was made clandestinely, and we were pressed for time. I was assisted in the examination by my friends Doctors Patterson and J. E. Bacon, who saw the case with me during its progress. The results of a further examination would doubtless have been very interesting, as the relative position of the bones and other important parts could have been more clearly ascertained. It was impossible, however, for the reasons above stated.

Augusta, Jan. 17th, 1835.

Art. III. *Case of Spontaneous Salivation, with reflections.* By S. Chew, M.D. of Baltimore.

In 1830, while residing in Calvert county in this state, I was called to attend Mrs. B., who had been suffering for two or three days from a severe attack of remittent fever, the endemic malady of the district. I found her laboring under the ordinary phenomena of the grave forms of that disease,—an accelerated and irritated pulse, great uneasiness of the stomach, intolerance of the least pressure over the scrobiculus cordis, and an intense

hyperæmia of the tongue and fauces. In addition to these symptoms, she was harassed by a profuse ptyalism. She experienced a brassy taste in her mouth; there was a continual and copious flow of saliva; and the peculiar fœtor of the breath and perspiration, which is the common effect of mercurialization, was strongly perceptible immediately upon entering her apartment.

As mercurial salivation is a favorite expedient of the domestic practitioners of the county, I concluded that the lady had been subjecting her constitution to the customary discipline. Upon inquiring, however, I was assured, that she had taken no preparation of mercury, and indeed no medicine of any kind whatever. She stated, that seven months previously, she had been attended during an attack of bilious fever, by a physician, who found it necessary to give her a very large quantity of calomel, with the effect of producing a free ptyalism. From her disease, and from the consequences of this rough mode of medication she gradually recovered, and had enjoyed tolerably good though not robust health, until a few days before I was requested to see her. She was at that period attacked by the fever for which I attended her. On the day after its incursion, the ptyalism made its appearance, though her mouth had been, as she thought, perfectly well for more than six months. Her gums and fauces had been certainly entirely free from any manifest indication of disease, and there had been nothing abnormal in the action of the salivary glands.

The ptyalism was the only remarkable feature in her situation, and by proper treatment she was speedily restored to her ordinary state of health.

To assign the true cause of this salivation appears to me to be somewhat difficult. Against the belief that it was occasioned simply by an extension of inflammation or irritation from the gastric portion of the alimentary mucous membrane, to the salivary glands, arises the obvious objection, that, if such were the case, similar instances would be far more frequent than they are found to be. I am, moreover, uncertain whether the fœtor ordinarily accompanying ptyalism occasioned by mercury ever occurs in those cases which are produced by other agents. In 1831, I attended a child laboring under an attack of salivation, (the ptyalismus mellitus of the nosologists,) which had the appearance of being perfectly idiopathic. It was evidently not caused by the process of dentition, and not apparently connected

with any pathological condition of the stomach. In this case, though the flow of saliva was abundant, for ten days or a fortnight there was never any perceptible fœtor. Dr. James, the inventor of the celebrated febrifuge nostrum, asserts, that his powder had in several instances excited copious ptyalism, which was always wholly free from any offensive effluvium;* and many cases of a like character are recorded by other authors. From the peculiar odour attending Mrs. B.'s salivation, I should therefore be inclined to attribute it to the powers of mercury, and consequently to consider it as a recurrence of the ptyalism from which she had apparently recovered more than six months before. It is not clear whether mercury had been actually present in her system during the whole of this long period; or whether, after its extension, its effects had continued in the form of a predisposition on the part of certain organs to a peculiar mode of action, upon being aroused by a sufficient exciting cause. What influence, if it was present, had kept its energies so long quiescent; in what part of the body they had been encamped; and in what manner they were finally awakened to activity, are questions which occur more readily than their solutions. That in post mortem examinations quicksilver has been detected in the bile, in the bones, in various secretions, and in various organs of those who have been subjected to its violence while living, we are assured by numerous and respectable authorities. The lady whose case I have detailed, had taken an enormous quantity of calomel. It had probably produced a chronic impairment of the functions of nutritive or vegetative life, in consequence of which the vigor of the absorbents had been gradually and greatly diminished. Upon the increase of activity communicated to these vessels by the excitement of the initial stage of fever, absorption was resumed with augmented energy, a portion of the mercury heretofore latent was taken up, and the glands of the mouth became one of the emunctories for its final elimination from the constitution.

In conclusion, I would remark, that Dr. Sylvester has recorded, in the Medical Observations and Inquiries,† two cases, which he considers as proving that mercury is sometimes retained in the system for a very long period in a state of comparative inaction. In one of these instances, a salivation is said to have

*Medical Transactions, vol. 1. †Vol. 3, p. 241—245.

returned after an absence of nearly four months; in the other, after a still longer suspension of five months. Neither of them, however, is entirely satisfactory; for in neither did the ptyalism recur until a fresh quantity of mercury had been administered.

ART. IV. *Clinical Reports, with Reflections.* By the EDITOR.

WITH some of the magnates of the profession, who find no interest in any thing pertaining to medical science unless it bear upon it either the stamp of novelty, or a character out of the usual course of things, the following cases and reflections will doubtless be deemed of little value. As there may be others, however, who regard every pathological or therapeutical fact, or principle, of sufficient importance to be treasured up, we do not hesitate to fall in with their sentiments, and shall consequently, regardless of the contrary opinion, make a record of the cases, with such remarks as may be suggested by them.

CASE I. *Diarrhœa—Ulceration and Enlargement of the Intestinal follicles—Hypertrophy of the liver and obliteration of the gall-bladder—Chronic peritonitis, &c.*—Samuel Otis, aged 52, was admitted into the Baltimore Infirmary, March 24th, 1834. He represented that he had been sick several days, and had taken several cathartics. On the day previous to his admission he was seized with a profuse diarrhœa, by which his strength was very much reduced. When he entered the Infirmary he was almost pulseless; his extremities were of an icy coldness, and his general aspect indicated great distress. Warm wine whey was freely administered, and a large sinapism was applied to the abdomen. *7 o'clock* P.M. Pulse scarcely perceptible—extremities still cold—has frequent calls to stool, and passes copious watery evacuations. Pulv. Doveri, gr. xv. creta prep. ʒ ss. Wine whey continued—sinapisms to the extremities. Enema of starch with Tinct. Opii. ʒ iij. Midnight, pulse fuller—extremities still cold—diarrhœa continues unabated. An enema composed of starch, with Acetat. Plumb. ℈ i. Tinct. Opii. ʒ iij. Fresh sinapisms to the abdomen and inferior extremities. 1 A.M. The enema has had no effect in controling the diarrhœa. Pulv. Opii. gr. iv. Acet. Plumbi. gr. iij. Submuriat. Hyd. gr. ij. every two hours.

25th. Slight amelioration; partial reaction has taken place. The diarrhœa checked after the second powder. Strong wine whey to be administered freely. 7 P.M. not so well—pulse beginning to fail. Warm brandy toddy was given, and sinapisms applied to all the extremities and to the abdomen without effect. He died at 12 o'clock.

Autopsy.—The mucous membrane of the intestines, especially of the ileum, was extensively ulcerated, and its follicles were very much enlarged. The liver was enlarged, and its granules presented that preponderance of yellow, which is observed in what is called *nutmeg liver*. *The gall-bladder was obliterated, its place being occupied by condensed cellular tissue.* The peritoneal coat of the liver was thickened; the spleen soft and enlarged, and the parieties of the intestines attenuated. The aorta, from the origin of the cœliac artery to its bifurcation, was ossified, and the latter vessel and its branches, as well as the emulgents, were in the same condition. (*Reported by Mr. Alexander H. Bayly.*)

Remarks.—In a therapeutical relation, this case presents but little interest. The mischief had already advanced too far to be controlled by the powers of art, before the individual entered the Infirmary, and the remedies employed, consequently, exercised but little influence in staying the fatal termination. Considered in relation to the pathological phenomena observed during life, and the appearances discovered after death, the case would possess great value, were it not that the previous history is too imperfect to enable us to draw any very satisfactory inferences relative to the origin of the disease, its progress, and duration. All the circumstances, however, which were revealed by the post mortem examination, render it probable that the malady must have been of long standing. This conclusion is corroborated by the condition of the gall-bladder, liver and peritonæum, as well as by the state of the mucous membrane of the intestines. But what was the primary seat of the disease? Was it the peritonæum? We think not, because a simple implication of that structure, could not involve such extensive changes in the structure of the liver, not to say any thing of the state of the mucous membrane. Did it originate in the parenchyma of the liver itself? We do not think it probable; for while such a conclusion would reconcile itself with the lesions exhibited by that organ, it would be inadequate to explain

either the obliteration of the gall-bladder, or the ulceration and enlargement of the follicles of the mucous membrane of the intestines. We think it highly probable, therefore, that this latter structure was the part primarily affected,—probably the duodenal portion of it. It is to be regretted that this part of the alimentary canal was not examined with sufficient attention. It is a common occurrence for irritation originating in the mucous membrane of the stomach and duodenum to be transmitted to the granulated structure of the liver, and to the lining membrane of the gall-bladder, through the internal tunic of the excretory vessels, which is a mere prolongation of the mucous tissue of the alimentary canal. Taking this route, therefore, in the present case, adhesive inflammation was excited in the gall-bladder, by which it was obliterated, and the primitive radicles of the hepatic duct, which form so many minute cul de sacs in the centre of each granule of the liver, having the capillary blood vessels distributed upon them, being likewise involved in the same irritation, it can be easily conceived how this hypertrophy, attended with augmentation of yellow substance, was induced,—that yellow substance merely consisting of the delicate blood vessels, and their connecting cellular tissue, &c. which are spread upon the closed extremities of the radicles of the excretory duct. The liver once involved, the inflammation might easily extend to the peritonæum; and an extension of the irritation down the intestinal canal would naturally induce the ulceration and enlargement of the follicles, and the consequent diarrhœa by which the individual was destroyed.

Case II. *Muco-peritonitis—Extensive ulceration and thickening of the pyloric orifice of the stomach, and ulceration of the mucous membrane of the ileum.*—Philip Malay, aged 30, entered the Baltimore Infirmary, Sept. 6th, 1834. He reported that he had been laboring under fever about four weeks, and had taken several doses of calomel and jalap. The symptoms at the time of his admission were extreme tenderness and pain on pressure over the whole abdomen. Even the slightest touch occasioned acute pain, and excited a kind of spastic action of the abdominal muscles, which were constantly contracted and rigid. The stomach was irritable, and the skin hot and dry; but the tongue was pale and moist, and did not indicate much irritation of the mucous surfaces. The pulse was weak and frequent, and the bowels constipated. Cups were applied to the abdomen,

followed by a large emollient poultice. He was directed to have a table spoonful of castor oil, and to take effervescing draught every two hours.

7th. On the morning of this day he appeared much relieved. The tenderness of the abdomen was diminished; the tongue was natural; the skin cool and covered with a free perspiration, and the pulse was stronger and not so frequent. Cups and poultice to the abdomen were repeated; an enema was administered without effect, and the effervescing draught continued. 5 *o'clock*, P.M. He was taken with a vomiting of feculent matter; his extremities became cold,—his whole body was covered with a cold clammy perspiration; and the pulse became so weak and rapid as to be scarcely perceptible. Sinapisms were applied to the abdomen and extremities, and a turpentine enema was administered, which brought away an evacuation, followed by considerable relief. 8 *o'clock*. Cups and a blister were applied to the abdomen, and effervescent draught was prescribed at intervals.

8th. He was found no better. The following portion was directed for him every two hours:—℞ Tinct. cinchon. comp. Spts. Æth. Nit. āā ʒss. At 7 *o'cock*, P. M. he was worse. He was directed to have Ol. Terebinth. ʒii. every two hours. He however continued to sink gradually until four o'clock, A.M, when he expired.

Autopsy.—On opening the abdomen, the colon and the principal convolutions of the small intestines were found of a high red color, and covered with a recent viscous lymph deposite, which had particularly collected in the direction of the infractuosities of the intestinal convolutions, where it had already assumed a reddish vascular appearance, and partially agglutinated them together. The omentum was thickened, and adhered to the stomach, liver, spleen and colon. The peritonæum was covered in several places with granulations as large as a pea, which were of a gelatinous consistence. The stomach was slightly inflamed, and its pyloric orifice was wholly occupied by a large ulcer and extensive thickening of the surrounding walls. The lower part of the ileon was intensely inflamed and extensively ulcerated, and there were two strictures in the colon.—(*Reported by Mr. Thomas A. Healey.*)

Remarks.—In this case we have an example of inflammation originating in the mucous membrane of the alimentary canal,

and extending itself to the peritonæal covering of the tube. The large ulcer, and the extensive thickening, which occupied the pyloric orifice of the stomach, were probably the result of chronic disease; but the intense inflammation, and the numerous and extensive ulcers which were found in the ileum, were intimately associated with the attack of fever, under which the patient had been laboring for four weeks. This affection of the mucous membrane of the ileum seems, indeed, to constitute the chief anatomical character of the form of fever in question. In this case, the membrane was completely riddled with ulcers, many of them extending so deep as to nearly give rise to perforation of the intestine. This was the cause of the development of the peritonæal inflammation, which was most violent at those points corresponding to the seat of the principal inflammation of the mucous membrane. If the individual had survived a few days, complete perforation would probably have taken place, or that event would only have been prevented by the extensive adventitious adhesions formed between the convolutions of the intestines, which might have presented an artificial barrier to the escape of the contents of the intestine. The constrictions of the colon were likewise associated with inflammation of the corresponding portion of the peritonæum. The abdominal tenderness in this case, was exceedingly great, and that feature, together with the spastic contraction of the abdominal muscles excited by pressure, clearly indicated peritonitis. Hence, although the individual was much exhausted by previous disease, as active an antiphlogistic course as was compatible with his constitutional energies, was instituted and persevered in, until the vital powers began to give way. It was only when the pulse began to fail, that the turpentine was resorted to; but it, as well as the previous remedies were of no avail. The disease had already advanced too far. Appropriate treatment had been too long neglected, and as the case had not been met by an active antiphlogistic course at first, it could not be rendered available after the structure of the organs had become so extensively implicated.

Case. III. *Jaundice—inflammation and pulpy disorganization of the mucous membrane of the stomach.*—The subject of this case was a young man, aged about 25, by trade a watch maker, whose body we were requested by a medical friend to examine a few years ago. His habits had been intemperate, and

the affection of which he died had been probably brought on by the immoderate use of ardent spirits. His principal symptoms had been, an unconquerable irritability of stomach, and almost incessant vomiting, which nothing could control. He had also complained of pain in the hypochondriac and epigastric regions, and the whole skin and conjunctiva were of an intense yellow color.

Autopsy.—The omentum was highly red and injected,—the intestines presenting externally something of the same appearance. The mucous membrane of the stomach was intensely inflamed, and at several points, was softened, and detached to the extent of an inch or more. It also exhibited several dark colored spots, and the capillary veins were distended with black blood.—The organ contained a small quantity of a brownish colored fluid, mingled with minute fragments of disorganized mucous membrane. Some of the same kind of matter had been ejected at different times, by vomiting. Nothing was found either in the liver or gall ducts to account for the jaundice; the gland only being somewhat congested. The gall bladder was filled with thick viscid bile, having the aspect of pitch, but the ducts were perfectly pervious. The pancreas was considerably enlarged and indurated, but the spleen was healthy.

Remarks.—This case strongly corroborates a pathological principle which has received extensive sanction in modern times;—that there are many cases of jaundice in which the disease does not originate in the liver or its excretory appendages, but in the mucous membrane of the stomach and duodenum. To this fact, promulgated by Bichat, and confirmed by the observations of Broussais and Andral, we have had repeated occasion to advert in the course of our editorial labors, and it cannot be too often repeated. It was formerly too much the custom to consider jaundice merely as a consequence of mechanical obstruction of the excretory ducts of the liver, and to treat it by emetics, cathartics, resolvents and antispasmodics—to emulge, as it has been expressed, the biliary ducts. If the disease proceed from an extension of irritation from the mucous membrane of the alimentary canal to the liver, along the lining membrane of the common duct and the radicles which form it, the impropriety of this practice is too glaring to require comment; and that it does originate in this manner, in some cases at least, is fully proved by this case, and many others of a similar charac-

ter which have been reported. Here the mucous membrane of the stomach was inflamed even to the extent of disorganization, yet there was no perceptible organic disease of the liver on any of its appendages. In such a case, emetics and cathartics could scarcely fail to prove mischievous; and antispasmodics and resolvents would be altogether inadequate to afford relief. The jaundice was a consequence of acute gastritis excited by intemperance, and could only be successfully combatted by such means as would be calculated to subdue the primary affection.

While on this subject, we will take occasion to remark, that we have seen several cases of jaundice attended with much febrile disturbance, and strong evidences of gastro-enteric inflammation, in which the patient became speedily affected with a profound comatose state, from which nothing could rouse him. Associated with the febrile symptoms, there was great thirst, epigastric tenderness, constipated bowels, nausea and vomiting; the tongue at first being red and contracted, but soon becoming dry, brown and scabrous, and assuming all those characters which it presents in typhoid fever.—With this change of the tongue, the comatose symptoms generally set in, attended with muscular twitchings, and other indications of impaired or disturbed innervation. We have recently seen allusion made to this form of disease in several of the journals, with reference to its extremely fatal character. It seems to be an intense gastro-enteritis in its inceptive period, speedily involving the nervous system, in the manner in which that system becomes affected in typhoid fever, and is probably a variety of that disease. It has been generally remarked by those who have observed it, that it is almost constantly fatal, and every case we have seen terminated in that manner. We have sometimes seen yellow fever presenting a similar train of symptoms; and Dr. Stokes has given an excellent description of an epidemic form of gastro-duodenitis, which prevailed with great fatality in Dublin, the leading characters of which correspond very accurately with the disease to which we allude. He remarks, that the first sixteen cases which fell under the observation of himself, and his colleague, Dr. Graves, in the Meath Hospital, terminated fatally. We extracted these observations in the fourth number of the Baltimore Medical and Surgical Journal, p. 442, to which we must refer for further information.

Case IV. *Hæmatemesis.*—Charles Chester, seamen, aged 31, was admitted into the Baltimore Infirmary, 17th January, 1835. He has just returned from Canton, via Montevideo, in both of which places he was admitted into hospital for the treatment of syphilis, but experienced no material relief. He is now affected with the symptoms of that disease. The attending physician being absent, no remedies were prescribed for him. Two o'clock, P.M. vomited nearly a basin full of dark colored blood, mixed with clots, after taking a bowl of broth. Pulse rather soft and labored; tongue slightly furred; pain on pressure in the left hypochondriac and in the epigastric region; breathing difficult. Blood-letting from the arm.—℞ Opii. gr. ij. Submuriat. Hyd. gr. v.—Blister to the left hypochondriac, and afterwards to the epigastric region.—Effervescent draught.

18th. No return of vomiting; pulse fuller and stronger; pain in the epigastric and hypochondriac regions alleviated; bowels inactive; laxative enema with Tinct. Opii. gtt. lx. which in the course of half an hour brought away a copious dark fœtid stool, resembling the washings of a gun, and mixed with large clots of blood. The enema was repeated at 9 o'clock, P. M.

19th. Much better; pulse full and soft; no pain.—Boiled milk, with rice for diet. No medicine.

20th. Considerable fever; respiration difficult; bowels inactive; venesection.—Laxative enema, which brought away light colored stools, nearly natural.

21st. Bowels still inactive; difficulty of breathing abated; Obiern's rectum tube introduced without effect.—10 P. M. great tympanites of the abdomen.—Enema of common salt with Ol. Terebinth. without benefit. Two enemata of common salt were afterwards administered—the first containing tinct. assafœtida; the second, Ol. Terebinth.

22d. Same condition—enema repeated.

23d. Bowels inactive; abdomen tympantic—Ol. Ricini ʒ iij. Ol. Menthæ. gtt. iij. 9 P. M. Ol. Ricini ʒ ij. Ol. Menth. gtt. vj. Tinct. opii. ʒ i.

24th. Same condition. ℞ Pil. Hyd. ʒ ss. ft. Pil. xxv. Sumat. 1 ter in die.—Unguent. Hydrarg. fort. to be rubbed on the abdomen.

25th. Bowels less constipated; tympanites continues—continue as yesterday.

26th. Same condition. Ointment omitted—continue pills.

27th. Vomited and passed a large quantity of blood per anum; abdomen distended and painful to the touch; pulse tense, quick and small.—Venesection—Pulv. Doveri, gr. xij.

28th. Vomiting and passage of blood per anum continue; abdomen softer; pulse quick and tense. ℞ Sulph. Alum. ʒ ss, divid. in chart. vj. one to be taken every two hours, if the vomiting continues.

29th. Does not pass blood; pulse tense and quick; tongue red upon the edges and furred; breath very offensive; abdomen swollen, and the existence of fluctuation renders it probable that it contains water; blister to the epigastrium; to be bled; to take the powders if the vomiting continues—10 o'clock much worse; pulse does not warrant blood-letting; seems to be sinking rapidly.

30th. Extremities cold; pulse very quick and small; odor offensive; seems to be insensible, and has not spoken for several hours; spontaneous evacuations of large quantities of blood; slight vomiting.

31st. Died this morning at 8 o'clock.

Autopsy by Dr. Wm. N. Baker. About a gallon of limpid water in the abdomen; peritonæum unusually blanched. The external surface of the colon and cæcum presents a dark cerulean aspect, occasioned by the blood contained within. The liver exceedingly indurated and tuberculated throughout—spleen enlarged, and tough in its contexture, but drained of its blood. The liver and spleen firmly united to each other, to the stomach, the peritonæal covering of the diaphragm, and the abdominal parieties, by dense bands of psuedo-membrane, in some instances covered by vessels. The whole of the pancreas indurated. The mucous membrane of the stomach and whole alimentary tube presents, at different points, patches of inflammation, *not recent?* The mucous membrane of the cæcum and ascending colon presents a fine display of follicular inflammation, but no ulceration. The small intestines contain a considerable quantity of mucus, tinged with bile.—The large intestines contain fœtid blood, mixed with fœcal water. The mesenteric glands all enlarged. Lungs healthy.

It is proper to remark, that the provisions of the ship in which this man returned to this country, were nearly or entirely exhausted near our coast; that the ship's crew were almost literally starved; and that this man had been indulging to great

excess for eight or ten days before his admission into the Infirmary.—*Reported by Mr. J. Hanson Thomas.*

Remarks.—This case presents many interesting traits, and we regret, that not having had the treatment of it, or an opportunity of observing its progress, we are unable to offer an analysis of its principal characters and phenomena. The association of gastric and intestinal hemorrhage with induration and tuberculation of the liver is an important feature in the case. But as the mucous membrane of the stomach and intestines, and the mesenteric glands, were likewise extensively diseased, it becomes a question, in what relation the several lesions should be considered with the effect produced—the hemorrhage from the stomach and bowels. Whatever may have been the origin of the disease, the mucous membrane of the stomach and bowels unquestionably constituted the *foyer* of irritation which was instrumental in exciting the hemorrhagic action; but from the extensive evidences of disease in the other abdominal organs, there is every reason to believe, that they likewise may have had some participation.

SELECTED PAPERS.

An Essay on the Morbid states of the Urine. By JOHN BOSTOCK, M.D. From the Cyclopædia of Practical Medicine. Part XXIII. Nov. 1834.

THE urine is the fluid which is secreted by the kidneys, and after being deposited for some time in the bladder, is discharged by the urethra. It is one of those secretions to which the term excrementitious has been applied, from its having been supposed to consist essentially of the substances which are separated from the mass of the circulating fluids, for the purpose of being discharged from the system as superfluous or useless, and if retained producing injurious effects.* The kidney has been considered as among the most important of that class of organs which have been styled vicarious or compensating—those which possess the power of temporarily fulfilling the office of some other organ. Thus, for example, if the cutaneous perspiration be suppressed, the aqueous matter is discharged by the kidney;† if an unusually large quantity of fluid be received into the stomach, and taken up by the absorbents, the kidney is the organ through which it finds a natural exit; and even with regard to various articles of food or medicine, although the intestinal canal affords them the most obvious means of being removed from the system, a portion of their elements is generally carried off by the kidney. It must be considered as in some degree owing to this circumstance, as well as to the specific office of the kidney, that the urine is the most compound of all the animal secretions, and, at the same time, the most variable in its contents. This latter property is further increased by the nature of the proximate principles which enter into its composition, many of which are readily decomposable, while they are likewise disposed to act on each other, and during their continuance in the bladder, are placed in a situation which is favorable to this action. These various circumstances would naturally lead us to conclude that the urine must differ considerably in different individuals, and that, in the same individual, under the various circumstances in which he is placed, both those of ordinary oc-

* *Blumenbach,* Inst. Physiol. sect. 34. *Adelon,* in Dict. de Méd. t. xxi. p. 64. Bostock's Physiol. v. ii. p. 371.

† We have an interesting series of observations by Lining, on the relation between the urine and the cutaneous perspiration in the different seasons; Phil. Trans. for 1743 and 1745. Observations of a similar kind have been made by other physiologists, but perhaps we have none that are equally numerous and correct.

currence, and more especially in the morbid conditions of the body, these differences would exist, and would be indicative of the causes by which they are immediately produced. We accordingly find that observations on the pathology of the urine were among the first which were noticed by the ancients; that they have at all times occupied a considerable share of attention among the most intelligent medical practitioners;* and that, by the vulgar and the uneducated, they have even been considered as alone sufficient to ascertain the nature of a disease, and as superseding all other pathognomonic symptoms.

On the present occasion we propose to commence by an account of the urine in its healthy state, and after attempting a classification of its morbid states, to offer some remarks on their immediate cause, and the relation which they bear to the derangements of the system. We do not think it necessary to enter upon the consideration of the medical treatment, because, on this subject, little would remain for us but to refer to the various articles which have appeared in the preceding volumes of this work, where the state of the urine has formed a characteristic symptom of disease, or an indication of the effect of remedies upon it.

1. *Of the healthy urine.*—It will be unnecessary to describe at length the appearance and external characters of the urine in its ordinary state. Its quantity varies much in different individuals, and in the same individual under different circumstances, and this without exceeding the limits of what may be strictly regarded as the state of perfect health. Physiologists have attempted to form an average estimate of the quantity voided during the diurnal period; but this investigation, simple as it may appear, is attended with considerable difficulty. Haller, after collecting a number of observations made by different individuals, fixed the quantity at forty-nine ounces.† The writer of this article, proceeding principally upon the observations of Rye, which appeared to him the most numerous and the most accurate on record, was induced to lower it to forty ounces;‡

*With respect to the ancients, it will be sufficient to refer to the second book of Hippocrates's treatise De Prædict., and to Galen's De Crisibus. As we approach to our own times, we may select from the more celebrated of the moderns, Willis's Exerc. de Urinis, and Bellini's work, De Urinis et Pulsibus. Since the improvements of modern chemistry made us acquainted with the constitution of the urine and the nature of its constituents, the attention of many of our most eminent pathologists has been directed to this subject with much success. Among the first and most valuable of their productions is the essay of Cruickshank, "On the manner of distinguishing Diseases by the Urine," which contains, in a short compass, much accurate and original observation. Rollo on Diabetes, and Tilloch's Phil. Mag. vol. ii. p. 240, et seq.

† Elem. Phys. 26, 4, 6.

‡ Rogers on Epidemic Diseases, Appendix to Med. Chir. Tr. vol. iii. p. 110.

while Dr. Prout, whose opinion on every point connected with this subject is of the highest authority, reduces it to thirty-two ounces.*

The specific gravity of urine, as might be supposed, is at least as variable as its quantity. It has been found, in some cases, not very much to exceed that of water, being as low as 1005, while in others it rises as high as 1040 or even 1050.† Both these extremes, however, especially the latter, are to be regarded as indicating a diseased state of the system, in which not only the relative proportion of the solid and the fluid part of the urine is affected, but where the nature of the solids themselves is changed. Dr. Henry is disposed to consider 1030 as a fair average of what may be regarded as healthy urine,‡ while Dr. Prout makes it no more than 1025;§ perhaps we shall not be able to fix upon a standard more likely to be generally applicable than 1020, which is not far from the mean between these numbers.‖

With respect to the chemical constitution of the urine, notwithstanding the elaborate examinations of it which have been made by chemists of the first eminence, there would appear to be still some degree of uncertainty. The analyses of Dr. Henry and of Berzelius, who have cultivated the department of animal chemistry with so much success, although essentially coinciding, differ in several minute points, both as to the substances which are actually present in the urine, and the mode of their combination. According to Dr. Henry there are twenty-one substances which "have been satisfactorily proved to exist in healthy urine;"¶ the list of these we subjoin, and compare it with that given us by Berzelius,** which, as will be seen, is somewhat different.

* Inquiry into the Nature of Gravel, &c. p. 35.

† *Cruickshank*, ubi supra. *Berzelius*, Traité de Chimie, par Esslinger, t. vii. p. 342.

‡ Elements of Chemistry, vol. ii. p. 490.

§ Inquiry, p. 5.

‖ Brande's Manual, vol. iii. p. 191. Berzelius adopts the estimate of Dr. Prout, ubi supra.

¶ Elem. p. 490.

** Traité, p. 392, 3. Berzelius arranges the substances found in urine under the two heads of the ordinary constituent principles, and the accidental principles; but the latter are chiefly composed of the substances that are found in the urine in its various morbid states: p. 343 and 399. Mr. Brande reduces "the substances that are always found in the urine" to twelve: water, carbonic acid, phosphoric acid, uric acid, phosphate of lime, phosphate of ammonia, phosphate of soda, phosphate of magnesia, common salt, sulphate of soda, albumen, and urea; Manual, v. iii. p. 191. Fourcroy extends the number to thirty, but the existence of some of these he considers as doubtful, at least in the natural and recent state of the urine: System of Chem. Knowledge, by Nicholson, v. x. p. 185.

Henry.	*Berzelius.*
1. Water.	Water.
2. Free phosphoric acid.	
3. Phosphate of lime.	Phosphate of lime.
4. Phosphate of magnesia.	Phosphate of magnesia.
5. Fluoric acid.	
6. Uric acid.	Uric acid.
7. Benzoic acid.	
8. Lactic (impure acetic) acid.	Free lactic acid.
9. Urea.	Urea.
10. Gelatine.	
11. Albumen.	
12. Lactate (acetate) of ammonia.	Lactate of ammonia.
13. Sulphate of potash.	Sulphate of potash.
14. Sulphate of soda.	Sulphate of soda.
15. Fluate of lime.	
16. Muriate of soda.	Chloruret of soda.
17. Muriate of ammonia.	Chloruret of ammonia.
18. Phosphate of soda.	Phosphate of soda.
19. Phosphate of ammonia.	Biphosphate of ammonia.
20. Sulphur.	
21. Silica.	Silex.
	Extract of meat soluble in alcohol.
	Extractive matters soluble only in water.
	Mucus of the bladder.

On comparing the two lists, we find that of the twenty-one ingredients enumerated by Dr. Henry, fourteen may be considered as recognized by Berzelius, while there are seven, viz. uncombined phosphoric acid, the fluoric and benzoic acids, the fluate of lime, albumen, gelatine, and sulphur, which are not included by him. On the other hand there are three substances, extractive matter soluble in alcohol, extractive matter soluble in water, and the mucus of the bladder, which are enumerated by Berzelius, but are not recognized by Dr. Henry. On these discrepancies we shall venture to remark that there appears to us to be scarcely sufficient evidence of the existence of uncombined phosphoric acid in healthy urine, and that the presence of benzoic acid, in human urine,* of the fluoric

* The principal authority for the existence of benzoic acid in human urine is Thenard; Ann. Chim. t. lix. p. 270. Dr. Prout, however, remarks "that it does not exist in healthy human urine;" Inquiry, p. 19. Berzelius informs us that the substance which had been supposed to be benzoic acid is a compound of this acid with urea, to which he gives the name of urobenzoic acid, p. 363. it may be presumed, however, that he does not conceive it to exist ready

acid,* and of course of fluate of lime, may be regarded as somewhat problematical. The existence of sulphur in urine, although omitted by Berzelius, appears to be fully established by the experiments of Proust.† With respect to two of the additional substances introduced by Berzelius among the constituents of urine, we feel disposed to admit of their existence; the extractive matter soluble in alcohol we believe to be either identical with, or to be very similar to the uncoagulable matter of the serosity of the blood, and to be nearly related to the proximate principle which has been styled *osmazome*. The mucus of the bladder, if not an essential constituent of the urine, we believe to be very generally present in it; and although it is not admitted by Dr. Henry into his list, yet he remarks, in a subsequent paragraph, that it exists in healthy urine.‡ As to the "extractive matters soluble only in water," we confess that we are altogether uncertain to what principle or substance Berzelius here refers, nor can we well conceive of any to which this description can be considered as appropriate.

Besides the substances mentioned above, there are others which have been supposed by some chemists to enter into the composition of healthy urine. This is the case with the carbonic and the acetic acids, the former of which, if not essentially present, is at least frequently detected in urine that exhibits no other morbid character;§ while the latter, which has been announced by Proust, Thenard, and others,‖ we may conceive to be the same substance with the lactic acid of Berzelius. To these we may add a certain principle or principles, which give the urine its peculiar color and odor, neither of which would appear, from the experiments of Dr. Prout, to be necessarily connected with the urea.¶ We may further re-

formed in the urine, as he does not place it in his list of its constituents. See also some experiments of Leibig, who detected a peculiar acid in the urine of the horse, but which appeared not to be the benzoic; p. 365. We may remark that Fourcroy and Vauquelin admit of its existence, but in an extremely minute quantity; Ann. Chim. t. xxxi. p. 62, 3.

* The fluoric acid seems to have been admitted on the authority of Berzelius; Ann. Chim. t. lxi. p. 256; also Med. Chir. Tr. v. iii. p. 258. He, however, as appears above, does not enumerate it among the constituents of urine in his last work.

† Ann. Chim. t. xxxvi. p. 258-60.

‡ Elem. v. ii. p. 493.

§ *Proust*, Ann. Chim. t. xxxvi. p. 260, 1; *Vogel*, ibid. t. xciii. p. 71 et seq.; *Marcet*, in Calc. Dis., p. 168-70; Prout's Inq. p. 19; *Henry*, v. ii. p. 495; *Brande*, Manual, v. iii. p. 192.

‖ *Thenard*, Traité de Chimie, t. iii. p. 728, and Ann. Chim. t. lix. p. 275; *Henry*, v. ii. p. 493, *Berzelius*, t. vii. p. 361, 2.

¶ Med. Chir. Tr. v. viii. p. 529, and Inq. p. 8-10; *Berzelius*, Traité, t. vii. p. 371, 2, and Journ. Roy. Inst. v. i. p. 401. See also Wohler's experiments on the mode of obtaining pure urea, in Ann. Chim. t. xliii. p. 64 et seq.

mark on the constitution of the urine, that we doubt whether albumen should be considered as forming one of its constituents while in the healthy state, and that we are not acquainted with any experiments which afford unequivocal evidence of the presence of gelatine.

The urine, in its natural and healthy state, always exhibits acid properties, as is shown by its effect on test-papers. We are disposed, however, to agree with Dr. Prout, that this excess of acid arises, not from any portion being in an uncombined state, but that certain of the alkaline and earthy bases are not neutralized, but are in the state of super-salts. This remark applies equally to the lithic and the phosphoric acids; the former of which we conceive exists in the form of super-lithate of ammonia, and the latter in the same state of combination with the alkalies, and probably also with the earths that are present in the urine. The same remark may apply to the lactic and the acetic acids; for in this case, as in the former, if we conceive them to be absolutely uncombined, they would precipitate the whole of the lithic acids.*

One of the most important circumstances connected with the chemical constitution of the urine is the state of solution in which the phosphate of lime is held, in consequence of the excess of acid, to which we have referred above. If this excess be neutralized by the addition of ammonia, the phosphate of lime is precipitated without decomposition, in the form of a white impalpable powder. The phosphate of magnesia is likewise precipitated without decomposition, but it unites with a portion of the ammonia, forming a triple salt, the ammoniaco-magnesian phosphate, as it has been usually termed. These two salts enter largely into the composition of certain urinary calculi, and it may be presumed that the deficiency of acid in the urine is, in this case, the immediate cause of their formation. Dr. Henry informs us that the average quantity of phosphate of lime in urine is about half a grain in each ounce of the fluid,† thus affording nearly twenty grains per day; a quantity amply sufficient to lay the foundation of a calculous concretion, were there not an appropriate solvent provided.

The presence of sulphates in the urine is clearly ascertained by the appropriate tests;‡ and as neither the sulphuric nor the phosphoric acids exists in the blood, it has been conjectured, with great plausibility, that one essential office of the kidney is to acidify the bases of these acids;§ the ultimate object of which may probably be, to remove the excess of earthy matter which remains after the employment of that portion of it which is necessary for the formation and support of the bones.

* Prout's Inq. p. 11-15.
† Elem. vol. ii. p. 491.
‡ *Berzelius*, in Med. Chir. Tr. vol. iii. p, 259-62.
§ *Berzelius*, ubi supra; Prout's Inq. p. 30, 1.

A much more important office of the kidney, what may perhaps be distinguished as its appropriate function, is the removal from the system of the superabundant nitrogene.* It appears to be essential to the existence and well-being of the animal fabric that an ample supply of this element should be always at hand, in order to contribute to the formation of the various solids and fluids into which it enters, as one of the most abundant constituents. The main source of this supply is introduced through the medium of the digestive organs; but as it is necessarily very variable, in consequence of the difference both in the quantity and in the quality of the ingesta, it follows that, on ordinary occasions, the supply is greater than the demand. The superfluous quantity is separated from the blood by the kidney under the form of the urea, the substance which may be regarded as the specific secretion of the organ, and as composing the essential ingredient in healthy urine.† It will not be necessary, nor would it indeed be proper for us in this place, to enter upon a minute description of urea, or of its relation to the various chemical re-agents; it will be sufficient to observe that nitrogene enters more largely into its composition than into that of any other organic body, constituting very nearly one half of its weight.‡

Another important circumstance to be attended to in the chemical constitution of the urine is its tendency to spontaneous decomposition, and to the reciprocal action of its various constituents upon each other. When

* Bostock's Physiol. vol. ii. p. 372.

† We are indebted to Cruickshank for our knowledge of the urea as a distinct proximate principle: Rollo on Diabetes, and Tilloch's Phil. Mag. ubi supra, its properties were afterwards more fully ascertained by Fourcroy and Vauquelin; Ann. Chim. t. xxxi. p. 68-71. The only other specific secretion of the kidney is the lithic acid: for a full account of this substance and its chemical relations, we may refer our readers the valuable inaugural dissertation of Dr. Henry, De Acido Urico, and to the abstract of it in the second volume of the Manchester Memoirs.

‡ The ultimate analysis of urea has been made by Berard, Dumas, and Dr. Prout; these two latter eminent chemists agree very nearly in their estimate, the former making the nitrogene 46.9 per cent., Ann. Chim. t. xliv. p. 273 et seq.; and the latter 46.66; Med. Chir. Tr. vol. viii. p. 535, and vol. ix. p. 483; Henry's Elem. vol. ii. p. 430; and *Berzelius*, Traité, t. vii. p. 378. According to the analyses of Henry, p. 496, and Berzelius, p. 392, 3, the urine, in its average state, contains 3 per cent. of urea, which will be very nearly 1.5 per cent. of nitrogene. Taking the specific gravity of the urine at 1020, and assuming that two pounds and a half are voided in the diurnal period, we shall have not much less than one ounce weight of nitrogene removed from the system daily. A portion of nitrogene, although very inconsiderable compared to that in the urea, is likewise carried off from the system under the form of lithic acid, of which it composes between 30 and 40 per cent.; *Marcet*, p. 73, *Berzelius*, p. 350. The nitrogene discharged in this way will not exceed two thirds of a grain daily.

the urine has been voided, and left at rest for some hours at the ordinary temperature of the atmosphere, it generally begins to deposite a portion of the salts which it previously held in solution. The immediate cause of this effect would appear to be the generation of a quantity of ammonia, arising from the partial decomposition of the urea; the ammonia thus produced is in part united to carbonic acid, which is also generated, while another portion of it saturates the excess of the acids in the super-salts, and in this way precipitates the lithic acid and the earthy phosphates. This process is considerably promoted by an increase of temperature; and it appears that it is carried on, to a certain extent at least, in the bladder, when the urine is by any cause detained for an unusual length of time in that cavity.*

At the same time that these changes are going on, or perhaps in a later stage of the process, a quantity of acetic acid is also generated, which unites with another portion of the ammonia; thus the acetate and the carbonate of ammonia, the neutral phosphate of lime, and the ammoniacal phosphate of magnesia constitute the immediate products of the spontaneous decomposition of the urine. If we admit the speculation of Berzelius, which appears to be supported by many powerful considerations, that the kidney is the general outlet by which the effete or decomposed materials of the system are removed from the body after they have discharged their respective functions,† we shall have an additional source of diversity in the composition of the urine, and also, in proportion to the heterogeneous nature of its constituents, we may expect that there will be an increased tendency in its component parts to react upon each other.‡

* *Fourcroy and Vauquelin*, Ann. Chim. t. xxxi. p. 58, 60. *Berzelius*, t. vii. p. 342.

† View of Animal Chemistry, p. 16, 82; Traité, t. vii. p. 339.

‡ For a more minute account of the properties of the urine than would be consistent with the object of this article, as well as for an historical detail of the successive discoveries which have been made respecting it, the reader is referred to Aikins' Dict., in loco; Thomson's System, vol. iv. p. 551 et seq.; Henry's Elements, vol. ii. p. 489 et seq.; Brande's Manual, vol. iii. p. 190 et seq.; Turner's Elements, p. 775 et seq.; *Thenard*, Traité de Chimie, t. iii. p. 723 et seq.; *Berzelius*, Traité, t. vii. p. 339 et seq.; and Med. Chir. Tr. vol. iii. p. 257 et seq.; *Montfalcon*, in Dict. des Scien. Méd., article *Urine;* to which is appended a copious list of references by Vaidy, which is very complete for the earlier writers, but less so for the more recent authors, and especially for the English; t. lvi. p. 332, 4; *Orfila*, in Dict. de Méd., article *Urine*, in loco; *Andral*, ibid, article *Urine Semeiotique*, in loco; we have a series of valuable experiments on the urine, many of them of a statical nature, by Chossat, in Magendie's Journ. t. v. p. 65 et seq. Fourcroy's great work contains a most minute account of the urine at the period when it was written, but later discoveries and experiments have led to an alteration or modification of many of the statements; System, vol. x. p. 129 et seq.

H. *Mordid states of the urine.*—Before we attempt an arrangement or classification of the morbid states of the urine, it will be necessary to form a clear conception of the nature of those changes in the fluid which may be entitled to this appellation. It would probably be impossible to form a classification which should include every casual or temporary alteration in the properties of the urine, nor if it could be accomplished, would its value be in any degree commensurate with the difficulty of the execution. Our object must be to charcterize those conditions of the urine which are well marked, which have a certain duration, where its constituents bear a new chemical relation to each other, and where this is connected with an altered state of one or more of the animal functions. Proceeding upon this basis, we shall endeavor to arrange all the morbid states of the urine under the seven following species, naming them from the circumstance from which they derive their most obvious properties: 1. the aqueous; 2. the sub-aqueous; 3. the lithic; 4. the phosphatic; 5. the purpuric; 6. the albuminous; 7. the saccharine. To these we must add, as a kind of appendage, an eighth section, in which we may include various miscellaneous or incidental circumstances connected with the constitution of the urine, which are not capable of being reduced to any assignable or recognized species.

1. *Aqueous urine.*—This may be characterized as a state of the secretion, where the proportion of the fluid to the solid contents is morbidly increased, and which is frequently, although not necessarily, attended by an increased quantity of the urine that is discharged. And here we must be careful not to confound those incidental or temporary changes in the state of the fluid, such as are produced by the application of cold to the surface of the body, or by certain mental emotions, with the watery urine, which proceeds from a permanent or constitutional cause. Among the causes of this description, perhaps the most frequent and the most efficient is that state of the system which has been denominated the nervous temperament, and more especially the peculiar modification of it which gives rise to the hysteric paroxysm. Here we have an unusually large quantity of urine discharged, and this often containing less than the ordinary proportion of solid matter, and as far as has been ascertained, without any other essential change in the nature or proportion of its constituents. The aqueous urine will be often found to exist in that state of the system, where, without any specific disease, the powers both of the mind and the body begin to decline, and when the gradual decay of all the organs indicates the approach of old age.* Here the functions of the kidney are among the first to feel the effects of that decay, which gradu-

* The late Dr. Heberden, in his invaluable volume, enumerates the frequent passing of urine among the symptoms of what he styles Valetudo Conquassata; Comment. chap. 94; in this state we believe the urine will be found to be much increased in quantity, and to be aqueous.

ally undermines every part of the system, and which terminates in its dissolution. We are not aware of any specific cause of this particular condition of the urine, independently of the general irritability and debility of the system; nor do we know that it leads to any specific indication either of prognosis or of treatment. We believe, however, that it is an actual and not a very unfrequent occurrence, and that it is one to which the attention of the practitioner may be advantageously directed, as it may assist him in forming an opinion respecting the general state of the vital energies of the system, and of the degree in which the organs of digestion and assimilation are capable of performing their functions.

2. *Sub-aqueous urine.*—This, in its specific character and its appellation, may be considered as directly the reverse of the former state, and yet, in its pathological cause, is somewhat closely connected with it. In certain cases of increased discharge of urine, it will be found, that besides an augmentation in the quantity of the secretion, it contains even more than the ordinary proportion of solid contents, and thus, both from its quantity and its quality, carries off from the system an unusually large proportion of the ingredients, which ought to be applied to its growth or support. The sub-aqueous urine is sometimes found to exist in the decline of life, and would appear to be one cause among others by which a premature state of decay is effected. But it more frequently occurs at an earlier period in constitutions that have been debilitated by various causes, and particularly by excesses of all kinds; by long-continued violent exercise, by stimulating diet, and especially by large potations of wine and fermented liquors, and perhaps, more than any other cause, by excessive sexual indulgence. This state of the urine is occasionally met with in persons whose constitutions have been injured by a residence in tropical climates.

The sub-aqueous urine is often found to be connected with the albuminous, or to alternate with it; and it would appear to be, to a certain extent, the result of the same causes acting upon a different constitution, and exhibiting themselves in a more chronic form, consequently with less of febrile action and without the specific derangement of any particular organ. To this species we are disposed to refer the variety of diabetes which has been termed *insipidus*, where we have an increased flow of urine, of high specific gravity, with the constitutional symptoms of the disease, both as to the state of the digestive organs and the skin; but where the urine does not contain any saccharine matter.* We believe

* The writer of this article presented a case of this description to the Medico-Chirurgical Society, where the urine contained no saccharine matter, but where its specific gravity was 1034, while the quantity discharged daily amounted to five quarts. By an analysis of the urine it appeared that the patient was discharging daily seven and a half ounces of urea, which may be considered as at least three times the natural quantity. Med. Chir. Tr. vol. iii. p. 107 et seq.

it will be found upon examination that the sub-aqueous state of the urine is not unfrequently a precursor of its saccharine state, and that, in some cases, which may be correctly styled diabetes, the disease never proceeds beyond this stage, in consequence of some change being effected in the constitution, either by natural causes or by the operation of remedies.

3. *Lithic urine.*—This is characterized by the spontaneous deposition of lithic acid, constituting the principal part of what is generally termed the sand or gravel of urine. The immediate cause of this deposition is the presence either of some other acid in the urine, which may precipitate the lithic acid naturally contained in it, or merely an increased quantity of the lithic acid itself, or rather the super-lithate of ammonia, so as to be more than can be held in solution in the urine, especially when it is reduced in temperature, after being discharged from the bladder. It appears that this latter, which is the simplest form of the disease, is also the most frequent, and in fact that there are few individuals in whom it does not occasionally exist:* we find, indeed, that any cause which deranges the digestive process or interferes with its due action, may produce the deposite of lithic acid. Among the most frequent of these causes we may enumerate an excessive quantity of food taken into the stomach, food of an indigestable nature, exercise taken immediately after a full meal, the application of cold to the surface of the body or to the feet during digestion, and an undue quantity of liquid taken into the stomach.

In the most simple form of the disease there is a deposite from the urine, as it cools, of a brown sediment, which is either pulverulent, or consisting of a mixture of the powder with minute crystalline spiculæ. When this deposite, as is frequently the case, assumes a pink or purple color, it depends upon a combination of the purpuric with the lithic state of the urine. In the less simple form of the disease there would appear to be an additional agent in the urine, besides the superabundant lithic acid, which produces the deposite in question. Dr. Prout supposes that the precipitation may be effected by various acids, but most generally by the phosphoric, and occasionally by the sulphuric, the nitric, or the carbonic, as well as by some other acids which are the peculiar product of the renal secretion.† In this case the lithic acid is precipitated in more or less of a crystalline state, and forms the greatest part of what has been termed urinary gravel. This gravel, like the sand in the former variety, may be tinged of a pink or purple color, depending, in like manner, upon the combination of the purpuric with the lithic urine.‡

* Prout's Inquiry, p. 121.

† Inquiry, p. 128.

‡ For a very complete account of this variety of the urine, and of the state of the system which produces it, the reader is referred to the valuable treatise of Dr. Philip, first published separately in the year 1792, and afterwards, in an altered form, in the sixth volume of the Transactions of the College of Physi-

With respect to the pathology of the lithic urine, it may be generally considered as a symptom of an imperfect state of the digestive organs either induced, in each individual case, by a specific cause acting upon the stomach and the chylopoietic viscera, or by a peculiar condition of the constitution, more especially by the gouty diathesis.* It is this state of the urine which lays the foundation for a large proportion of the calculi which are occasionally formed in the bladder, or other parts of the urinary organs. We find, by chemical analysis, that the most frequent species of these concretions consist essentially of lithic acid, and that in many others, where the bulk of the calculus is composed of the phosphates, the nucleus consists of lithic acid.†

4. *Phosphatic urine.*—This, when considered in its chemical relations, may be regarded as the opposite state to the lithic, consisting essentially in an excess of the phosphoric salts, and especially of the phosphates of lime and of magnesia, with a comparative deficiency of the lithic acid. Hence it is characterized by the deposition of the phosphates in the form of a sediment, which is generally white, and of an earthy or chalky appearance, although occasionally assuming the crystalline state. The chemical constitution of the phosphatic urine appears to differ considerably in different cases, all of which, however, agree in the characteristic circumstance of the excess of the phosphoric salts. Sometimes there is a deficiency of the urine in proportion to the saline ingredients, and at other times there is an absolute deficiency of both the urea and the salts, reducing the urine to the aqueous state, but still maintaining the relative excess of the phosphates.

The pathological condition of the system which produces the phos-

cians, and to the third chapter of the second section of Dr. Prout's Inquiry. Both these writers refer to a work, published nearly half a century ago by Forbes, which appears to possess very considerable merit, when we consider the imperfect state of chemical science at that period.

* We are indebted to Wollaston for the discovery of the chemical nature of the gouty concretions, which had been previously termed chalk-stones, as consisting of the lithate of soda. Phil. Trans. for 1797, p. 389. These bodies had been previously examined by Berthollet; but it appears that this eminent chemist, who on most occasions is so remarkable for his accuracy; in this instance proceeded rather upon theory than actual experiment. He supposed that the urine of gouty patients was deficient in phosphoric acid, and that the acid was deposited in the joints in combination with lime. Journ. Phys. t. xxviii. p. 275. In connexion with the subject of gouty urine we may refer to the work of Sir C. Scudamore, who performed a series of experiments on this subject.

† *Fourcroy and Vauquelin*, Ann. Chim. t. xxxii. p. 217; Philip, Trans. Coll. Phys. v. vi. p. 176; *Pearson*, in Phil. Trans. for 1798, p. 38; *Marcet*, ch. v. Prout's Inq. p. 65 et seq.; *Henry*, Med. Chir. Trans. v. x. p. 132; *Smith*; Med. Chir. Trans. v. xi. p. 10; *Egan*, in Tilloch's Phli. Mag. v. xxiii. p. 199, et seq.

phatic urine is less easily characterised than the lithic, as it would appear that a variety of circumstances, which have no very obvious connexion with each other, both of a constitutional and a local nature, agree in producing this morbid change in the state of the urine. The phosphatic urine is frequently observed in sickly and ill-fed children, in those that inherit a scrofulous constitution, or where we have reason to suspect the existence of diseased mesenteric glands. Again, in the decline of life we find that various circumstances, which contribute to break down the constitution, and affect the digestive and assimilative functions, diseases of the glandular system, and especially local injuries of the parts contiguous to the kidney, are among the frequent causes or concomitants of the phosphatic urine. It would appear also to be produced by mechanical irritation of the bladder; for it has been observed that a considerable number of the calculi, which are principally composed of the phosphates, possess a nucleus or lithic acid, or some substance which has been accidently introduced into the bladder, and which appears, by its action upon that organ, to have contributed to the production of the excess of the phosphates, and their consequent deposition. As in the case of the lithic urine, so the phosphatic is sometimes connected with the purpuric state, thus affording deposits of various shades of color.* We also find that the lithic and the phosphatic urine not unfrequently alternate with each other: it is this state of things which gives rise to one of the species of calculi which have been termed, from their mechanical formation, alternating.† Upon the whole, we must consider the phosphatic urine as indicating a greater derangement of the system, and one which is less under the influence of curative means, than the lithic.‡

5. *Purpuric urine.*—This is characterized by the color of its deposite, which, in its ordinary state, has obtained the name of the lateritious sediment. It was recognized as the indication and concomitant of the febrile state of the constitution, among the earliest observations that were made on this fluid, and one which has always been regarded as among the most decisive pathognomonic symptoms of an increased action of the arterial system. The first attempt to ascertain the immediate cause of the change of the urine appears to have been made by

* The combination of the phosphatic and the purpuric deposits may in most cases be distinguished from that of the lithic and the purpuric, by the latter being tinged with the brown color of the lithic acid, while the former, being a mixture of a white and a purple substance, are of a purer pink color.

† Marcet, pp. 59, 96.

‡ Perhaps one of the most valuable parts of Dr. Prout's work is his chapter on what he styles "the phosphatic or alkaline diathesis;" although, were we inclined to be hypercritical, we might object to the term *alkaline* as applied to this state of the urine.

Proust,* but not with any great success, as he does not appear either to have ascertained the exact nature of the change, or the means by which it is effected. For the more correct information which we possess on the subject, we are indebted to Dr. Prout, who investigated it with his accustomed acuteness, and proved that a new substance, possessing the properties of an acid, is produced in the urine, which, from the color of its combinations with the alkaline bases, he termed the purpuric acid.† He also rendered it probable that all the shades of color which were observed in the urinary deposites, from reddish brown to pink and purple, may be referred to the mixture of the purpuric with the lithic acid, or with the phosphates of lime and magnesia.

With respect to the pathology of the purpuric urine, it may be simply characterized as the urine produced by that increased action of the arterial system which constitutes imflammatory fever; which, therefore, may occur either in its simple state, or in combination with the lithic or the phosphatic urine, when any circumstance induces febrile action while either of these states is present. It has been supposed that the purpuric urine is more immediately connected with the diseases of certain of the abdominal viscera, but we conceive there is reason to doubt whether this opinion be tenable, and we undoubtedly find that the purpuric urine exists, in the most marked form, where we have been unable to discover any traces of local inflammatory action. The existence or the purpuric urine in its various shades and combinations is almost as frequent an occurrence as the lithic, and is in many cases produced by very slight derangements of the system. But when, on the other hand, it exists in a high degree, and continues for a long time without interruption, it indicates a morbid derangement of the functions, which it is often difficult to remove, and which must be regarded as leading to an unfavorable prognosis.

6. *Albuminous urine* is distinguished by its exhibiting the presence of the proximate principle from which it derives its specific appellation, when the appropriate tests are applied to it. The albumen sometimes exists in so great a quantity as to render the fluid more or less opaque when it is discharged from the bladder; but it may be frequently detected in the fluid by exposing it to heat or to certain chemical re-agents, when it is not otherwise visible. It seems to have been first distinctly brought into view by Cruickshank, in the essay to which we have referred above:‡ it was afterwards very carefully described by Blackall, who considered it as a pathognomonic symptom of a peculiar species of dropsy, which, as he

* Ann. Chim. t. xxxvi. p. 265-9.

† Phil. Trans. for 1818, p. 420 et seq.; and Med. Chirurg. Trans. vol. x. p. 481, 2.

‡ Rollo on Diabetes, and Tilloch's Phil. Mag. vol. ii. p. 248.

conceived, required a specific mode of treatment,* and has more lately been made the subject of consideration by Dr. Bright, in the series of his valuable pathological observations.† Albuminous urine is symptomatic of increased action of the arterial system, connected with visceral derangement; generally of the kidney, (when it is frequently attended by dropsy,) and occasionally of the liver, so as to constitute a very formidable disease. In other instances, however, it would appear to be produced simply by a morbid condition of the digestive organs, unconnected with any structural disease, and in this case to be of transient occurrence, and to be indicative of a slight derangement of the functions.

7. *Saccharine urine*, like the albuminous, derives its specific name from the presence of the proximate principle which is found to exist in it, and which constitutes the most remarkable pathognomonic symptom of the ordinary form of diabetes. This disease had been very correctly described by the ancients; but although they noticed the increased flow of urine, its peculiar condition, as containing a quantity of saccharine matter, was first pointed out by Willis. Of late years, since the chemical constitution of the animal fluids, both in their healthy and their morbid states, has been more attended to and better understood, the saccharine urine of diabetes has been the subject of very numerous experiments. The result appears to be that the urea is in a great measure deficient, while in its place the kidney secretes a substance which has every property of sugar, both as ascertained by the spontaneous changes which it undergoes, and by the action of chemical re-agents upon it.‡

8. In this section, devoted to the consideration of the various miscellaneous or incidental circumstances connected with the state of the urine, we shall merely enumerate some of the substances which are stated to have been occasionally observed in this fluid. Of these we may mention blood in its entire state, perhaps, in some instances, the red particles alone, without the other constituents, pus, mucus, bile, and various articles of food or medicine, or rather certain principles immediately derived from them. To these we may add certain substances which have not hitherto been noticed among the ordinary constituents of urine, which enter into the composition of some of the urinary calculi, all of which we may presume exist in the urine in some part of its course from the kidney to the

* Observations on Dropsy. We have a judicious critique on this work in the Edin. Med. Journ. vol. ix. p. 334, et seq.

† In connexion with the account of the albuminous urine, which is contained in Dr. Bright's Medical Reports, the reader is referred to Dr. Christison's remarks in the Edin. Med. Journ. vol. xxx. p. 107 et seq., and to the observations of Dr. Gregory in vol. ii. xxxix. p. 54, et seq.

‡ In the eighth volume of the Med. Chir. Trans. p. 537, Dr. Prout has given the analysis of the saccharine urine: see also Chevreul, Ann. Chim. t. xcv. p. 319, and Bostock's Physiol. vol. ii. p. 361.

uretha. These various occurrences are all of them more or less important, and deserve to be noticed by the pathologist and the practitioner, as indicating the existence of derangements, either constitutional or local, and as consequently directing us in our prognosis and guiding us in our treatment. The only general conclusion which we can form on the subject is, that the renal secretion is peculiarly liable to be affected by causes, both internal and external, of all descriptions; and that, although the observation of its changes has been frequently resorted to as the means of imposing on the credulity of the vulgar, there is perhaps no one circumstance connected with the animal economy, which is more worthy of the attention of the enlightened practitioner, and which is more likely to repay his researches by affording him an indication of the state of the functions, and of the effect of the curative means by which he endeavors to correct their various morbid states.

On the presence of an Aromatic Substance in Urine analogous to Musk. By A. CHEVALLIER.—Among the singular phenomena which presented themselves to M. Chevallier while engaged in the examination of the urine of different patients, he remarked the presence of an aromatic substance analogous to musk.

In three cases this was observed; 1st, in the urine of a man treated by M. Andral, the younger, for arthritic pains; 2d, in that of a lady laboring under *pneumonia;* 3d, in that of a student of pharmacy. In none of these cases had the individual used musk. In the first two cases the urine had a very marked odor of musk. Submitted to distillation, it furnished an aromatic liquor possessing the odor of both urine and musk. The former disappeared at the end of a few days, leaving the latter alone perceptible. This odor continued for several months. In the third case, the individual found occasionally that his urine had a light agreeable odor, which he compared to that of musk. This occurred in various circumstances, but especially after exercise. In these cases the urine possessed more odor in the evening than in the morning, and making water was preceded by rather acute pains in the kidneys. The patient had never swallowed musk, and he had not touched it while the phenomena appeared. M. Chevallier has met with the odor of musk in a small uric acid *calculus* examined by him; but this is the only instance in which he has met with it in upwards of two hundred calculi which he has examined.

It is probable that musk may, in certain cases, be produced in the animal economy, in consequence of morbid alterations. The odor of this principle has already been recognized in the bile, and some of the other products of animal nature; and it is probable that it is further produced in other circumstances.

It may be here observed, that cow-houses almost invariably exhale a musky odor; and that it is not at all improbable that this depends on the presence of some musk-like principle in the urine of the cow.—*Journal de Chimie Medicale.—Edinburgh Med. and Surg. Journal, October*, 1834.

REVIEWS.

Admonere voluimus, non mordere.——
Sunt bona; sunt quædam mediocria, sunt mala plura.

Chemical and Medical Researches on Kreosote. Its preparation, properties and use. By E. MIGUET, Physician, Mem. Chem. and Phil. Soc. of Paris, &c. &c. Translated from the French by Wm. Wetherill, M.D. Philadelphia. Judah Dobson, 1835.

OUR attention has recently been directed to a small work, bearing the above title, which contains, as its tenor imports, an extended account of Kreosote, in its manufacture, chemical characters, physical, physiological and therapeutic properties. The information which has been communicated to the world heretofore on this subject has been scattered through so many periodicals, and at such irregular intervals, that we gladly avail ourselves of the present comprehensive view of all that is known in relation to it, to present our readers with such an abstract as will enable them to form definite ideas of the sanative properties of kreosote, and its claims to admission among the established articles of the materia medica.

Its name is derived from two Greek words, (κρεας, flesh, σωζω, I preserve) signifying a preserver of flesh, which was given it by its discoverer, Mr. Reichembach, who first separated it from pyroligneous tar. The action of kreosote upon the skin of his fingers induced Mr. Reichembach to believe that he had discovered the preserving principle of pyroligneous acid, and numerous experiments, confirmed the opinion of its efficacy, in suppurating sores, chronic diseases, &c. It also occurred to him from its antiseptic action on dead animal matter, that it would be of much service as a therapeutic agent, when placed in contact with living tissue. We now proceed to an abstract of its different properties, manufacture, &c. and first of its

PHYSICAL PROPERTIES.

Kreosote is a colorless transparent liquid, of an OLEAGINOUS CONSISTENCE, a disagreeable, penetrating odor, resembling smoke, and a burning very caustic taste. It has great refracting powers, and sp. gr. 1.037.

CHEMICAL PROPERTIES.

It boils at 203° Cent., (397° F.) and is not congealed at 27° Cent. (80° F.)* Burns with a smoky flame, and is not a conductor of electricity.

* There must certainly have been an omission of the sign minus here, as the temperature here designated is one at which we should scarcely expect any thing to congeal. The text should doubtless read—27° Cent., 17° F.

"It forms with water at twenty degrees, two different combinations; one is a solution of one and a quarter of Kreosote in one hundred parts of water, which makes one part of Kreosote to eighty of this liquid; the other on the contrary, is a solution of *ten parts of water in one hundred of Kreosote.*"

It has not fallen to our lot to meet with the original treatise of Mr. Miguet, but we can scarcely believe that the American translator has correctly interpreted his meaning in the preceding paragraph. In the first place *our* chemistry admits no knowledge "*of water at twenty degrees,*" or at least affixes no definite idea to the term. Nor should we call a solution of a substance in, or rather its diffusion through a menstruum, "*a combination.*" And in the latter part of the sentence kreosote is evidently put for water, and *vice versa.* Our intention, however, is not to criticize; but we could not forbear the above remarks, lest the evident inaccuracies should mislead some whose chemical information was not of sufficient extent to enable them to make the proper corrections.

"The aqueous solution neither changes the color of tournsol or curcuma, nor is it neutralized by either acids or alkalies. It forms, however, with these bodies a number of curious combinations. Nitric acid acts on Kreosote with a disengagement of red vapours. It combines with chlorine, bromine, iodine, phosphorus, and sulphur. Kreosote dissolves potassium, with a disengagement of gas, and the formation of potash, which remains combined with the thickened Kreosote, from which combination the latter substance may be separated by distillation, without any alteration. A small quantity of concentrated sulphuric acid colors Kreoste red; in larger quantities it blackens and thickens it. The acid is decomposed, and sulphur left free. Acetic acid appears to be its proper solvent, and combines with it in every proportion. With potassa Kreosote forms two combinations in the cold—one being an anhydrous liquid, of an oily consistence; the other a hydrate, which crystalizes in pearly white spangles. Its action upon soda is analogous. Carbonic acid decomposes both these compounds. Kreosote has a great affinity for lime and the hydrate of baryta, and forms with these bodies compounds of a dingy white color, soluble in water, which, when dried and powdered, are of a pale rose color. Ammonia dissolves Kreosote in the cold, is an almost constant attendant on it, and is separated from it with some trouble.

Kreosote dissolves a vast number of salts, some hot, others cold, and it combines in every proportion with alcohol, æther, carbonate of sulphur, (carburet of sulphur?) eupione, and acetic æther.

Of all organic bodies, it most actively attacks the resins, resinous coloring matter, and other similar principles. It even decomposes them cold, as well as totally dissolves them.

Kreosote immediately coagulates the white of an egg; a property upon which its efficacy is rationally founded. A single drop of it added to an aqueous solution of that substance, immediately fills the fluid with coagulated particles of albumen.

Fresh meat, placed for an hour in a solution of Kreosote, and well dried, may be exposed to the heat of the sun without putrefying; it will become hard in about eight days, and assume an agreeable odor of good smoked meat, of

a reddish brown color. Fish may be preserved by the same process, and birds killed by Kreosote were preserved a month and a half without any unpleasant smell.

Experiments instituted by Mr. Reichembach, to ascertain the action of Kreosote upon the serum, the coagulum, the coloring matter and pure fibrine of the blood, have induced him to conclude,

1st. That Kreosote coagulates the albumen of the blood,

2d. That this coagulation takes place immediately when the two liquids are concentrated,

3d. That it takes place little by little, when either is in quantity.

4th. That the fibrine separates itself from the other principles and is not attacked by the Kreosote.

It is said that the albumen, which is coagulated, will not putrefy; and the muscular fibre alone does not appear susceptible of putrefaction.

PREPARATION.

Two processes have been pointed out; one for the extraction of Kreosote from pyroligneous acid, the other from tar. I have no doubt the last process will furnish the greater quantity, and the extraction will be more easy.

Tar is produced from the dry distillation of organic bodies, beach wood, for example; this is distilled in an iron retort, until the residue has the consistence of black pitch. Care must be taken not to prolong the distillation, because the residue would again be carbonated, which would introduce into the liquid empyreumatic products, from which we are desirous to free it by this first distillation. The liquor caught in the receiver contains an acid empyreumatic water, which is to be rejected, and an oil, called oil of tar, which is afterwards placed in a glass retort, and rectified; it is requisite not to continue the distillation to dryness, and to reject the acid water again taken in the receiver. In these two distillations, the oil of tar, which first passes over at a low temperature, is light, though unequally so; but its gravity increases by heat. Attention is requisite to the time when the oil passes to the bottom of the water; all above this liquid contains but a small quantity of Kreosote; it contains principally eupione, with other different light substances, affecting the purity of Kreosote; all this supernatent liquor should therefore be rejected. In this state, the oil of tar is of a yellow pale color, heavier than water; it becomes brown by exposure to air; its smell is disagreeable; its taste is acid, caustic, sweet, and bitter, at the same time: it is then heated and agitated with carbonate of potash, until when shaken it no longer disengages carbonic acid; it is then decanted, in order to separate it from the solution of acetate of potash, which is formed, and it is again distilled in a glass retort. The distillation must not be continued to dryness, and all the first products which float on the surface of the water must be rejected.

The oil must then be dissolved in a solution of caustic potash, of the specific gravity of 1.12, much heat is disengaged; part of it is formed into eupione, &c., and is not dissolved: it swims on the surface, and must be taken from it. The alkaline solution is placed in an open vessel, and brought slowly to ebullition. It absorbs with avidity a considerable quantity of oxygen from the air: an oxydizeable principle which is found in it is decomposed by this absorption, and the mixture becomes brown. After cooling, by exposure to air, weak sulphuric acid is to be added, until the oil is set at liberty.

It is now distilled with water, to which a small quantity of caustic potash is added; this is necessary, to prevent the Kreosote from dissolving, and the loss of distilling over again and again the water which comes over; though the water is kept in strong ebullition, yet the operation advances but slowly. Kreosote being but slightly volatile even at 100 degrees of Cent.; but after some time, though we yet see much oil in the matrass, the quantity passing by distillation has much diminished, and increasing the fire does not advance the process, this is the time for stopping this distillation. The residue contains picamore, a small quantity of this substance carbonated with potash, sulphate of potash, a small quantity of acetate of the same base, and the coloring principle.

The oil in the receiver, is to be separated from the water which has passed over with it, and is to be dissolved a second time in a solution of potash of the specific gravity of 1.12. There yet remains a considerable quantity of light oil which will not dissolve, formed of eupione, &c., which should be rejected. It is then again heated slowly in a vessel open to the air, to ebullition, and suffered to cool gradually. It again becomes brown, but much less so. Sulphuric acid must again be added, and care must be taken this time to add it a little in excess, because the oil itself absorbs a small quantity, and afterwards it is to be frequently washed in cool water, until it is no longer acid. The distillation is to be repeated with water, to which now no potash is added, but a little phosphoric acid, in order to deprive the oil of the ammonia, which is yet retained.

Again, you proceed to the third solution of the oil in caustic potash. If the precautions pointed out have been well observed, these bodies will now combine without leaving a residue of eupione; and the mixture heated in the open air does not become brown; it only assumes a slight red tint. It is clear, however, when eupione and brown coloring matter, may still be separated by alkaline solution, making it necessary to repeat, a sufficient number of times, its solution in potash. In this state, though the Kreosote is not pure, yet it may be employed thus for medical purposes. In order to purify it, it is necessary first to distil it with water; without any addition afterwards rectify alone the product of this distillation, which is only a hydrate; at first, much water passes over into the receiver; while the same heat is continued its quantity decreases, little by little, and at last stops altogether; a small quantity of Kreosote distils at the same time; all the first products ought to be rejected, and the Kreosote should not be collected until it distils purely without water, but yet when the heat is raised to 203 Cent. The last result may be improved, by again once rectifying the product of this distillation and making the vapors pass over chloride of lime.

This preparation, the operations of which required so much attention, and were so tedious and complicated, M. Reichembach wished to simplify by means more expeditious; but Kreosote obtained in this manner excited violent vomiting when administered internally, whilst at the same time its action on the skin was considerably weakened. This effect was attributed to a particular substance contained in this impure Kreosote, which possessed emetic properties to an alarming degree. In fact, a single drop applied on the tongue, brought on in one minute great nausea, accompanied with trembling; the face became flushed, the eyes fixed and protruded; these were followed by violent

vomiting, after which the most complete prostration took place. M. Reichembach, satisfied that he could not in this manner prepare Kreosote with security, without first depriving it of its emetic principle, found himself obliged to recur to his original method, which he recommends to observe with conscientious fidelity, if it is wished not to bring suffering on the sick, and cast his medicine into discredit.

PHYSIOLOGICAL PROPERTIES.

Kreosote applied to the tongue excites violent pain; the organ seems contracted, is neither red nor tumefied. If the Kreosote be pure, most violent burning is produced, with a smoky taste which extends over the whole surface of the mouth, invades the pharynx, and penetrates as far as the nasal cavities. Placed on the skin, a sensation is excited similar to that of a slight burn; it excites rubefaction, and an erosion of the epidermis, which splits and falls off in little rough scales.

Plants watered with Kreosote die, and some spiders, flies, and little fish, thrown into two ounces of water, containing in solution twelve drops of Kreosote, did not live more than two minutes after immersion. The poisonous property is probably owing to the quality it possesses of coagulating albumen, and which makes it a preservative against putrefaction. The plants and animals which were spoken of perished no doubt of asphyxia, that is to say, by a suspension of the circulation.

A young dog, two months old, was able to take with impunity during eight days, eight ounces distilled water, containing four drops of Kreosote. During the eight days following he took double the quantity. This was followed by symptoms of walking slowly with apparent pain, frequent nausea, intermittent trembling, and a perceptible falling away. The use of Kreosote being suspended, all the functions resumed their natural healthy condition.

Administered in the dose of two drachms, to half an ounce of water, to another dog, it produced the most alarming symptoms. After his death, an immediate post mortem examination developed some very remarkable organic injuries. Every tissue except the liver exhaled strongly the odor of Kreosote.

Is death in such cases to be attributed to inflammation or coagulation of the blood?

To the author it appears to be equally referrible to both.

May it not exercise a special action on the nervous system, which has as yet escaped observation?

From the foregoing, it follows:

1st. That Kreosote exercises an essentially deleterious action on the animal economy.

2d. That in a weak dose it has relieved much functional derangement, whilst diffused in two or four times its weight of water its effects are immediately mortal.

3d. That it acts as an irritant on the surfaces to which it is applied, and

4th. That poisoning by this substance may be established by the redness of the mucous membrane of the stomach and intestines; by the thickness and peculiar color of the blood; by the property which the alimentary (matter from the stomach) matter has of coagulating the albumen of an egg; in addition to the characteristic odor of Kreosote, which is exhaled from every tissue exposed to investigation."

Therapeutic properties.—The author proceeds to the consideration of the qualities embraced under this head, by reviewing the former reputation of tar water, and recounting the various virtues attributed to that now almost obsolete remedy. We trust that the author has not incurred the liability of being compared in his administration of kreosote with the enthusiastic Bishop Berkely, whose estimation of tar water, he relates, was so strong as to induce him to wish that he was able to place himself sufficiently high, and had a voice strong enough to cry to all the infirm, "Drink tar water."

"At the time M. Reichembach discovered Kreosote, and when he thought he had confirmed by experiments the medical virtues which he first believed it to possess, he communicated his first observations to the physicians of Vienna, who received them with but little favor; this did not deter him from following with ardor the examination of his new medicine. His situation for attending to these experiments was not very advantageous. There was not, for many miles around him, a physician sufficiently scientific to write a rational direction to his experiments, follow critically their results, and arrange properly the observations. Nevertheless, with the assistance of a surgeon from the country, and an apothecary, he was enabled to operate in a certain number of remarkable cures.

The first trials were upon light burns, or chaps in children, and on wounds; the success obtained, induced him to try it for itch, for chronic eruptions on the skin, for corroding ulcers, gangrene, white swelling, caries, tooth-ache, trumatic sores, every kind of ulceration, cancerous and syphilitic, and even in phthysis pulmonalis, this scourge so redoubtable against even the most robust youth, was made to succumb to the use of Kreosote, in the cure of which, according to the report of Mr. Reichembach, he was successful beyond all hopes."

Twenty-five pages of the work are occupied in details of cases in which kreosote was employed, arranged under their respective titles, as burns, itch and tetter, chaps, gangrene, caries, tooth-ache, whitlow or felon, scrofulous ulcers, ulcerated white swelling, hæmoptysis, ulcerated syphilitic chancres, wounds, phthisis pulmonalis and catarrhs, engorgements, indurations and white swellings, recent wounds and hæmorrhages, &c. &c. As the modes in which the remedy was applied in all the cases are embraced in the following branch of the treatise, we have deemed it unnecessary to abstract any details, believing that the scientific physician will be fully enabled to apply the kreosote in any manner he may desire, from the general principles laid down.

"MANNER OF USING IT.

In the use of Kreosote, a certain course should be pursued, in suitable relation to its nature and activity. It is necessary to keep it within just bounds, between an action too strong and an action too weak, determined by the changes and progress of the healing.

My observations have demonstrated, says M. Reichembach, that for healing certain ulcers, tetters and wounds, the water of Kreosote often has been

applied with success; but we must remember, as the water only holds in solution about one eightieth part of Kreosote, there are stubborn cases requiring a more powerful action. We are then obliged to have recourse to pure Kreosote, which if employed to a certain extent, causes slight inflammation, but it is soon relieved; for this reason our physicians stop the employment of Kreosote on the ulcers, as soon as the inflammation is decided, and leave the wound at rest during some days; afterwards, they again apply Kreosote, and if the inflammation again shows itself, it must be arrested; they continue thus until the greenish colored pus changes to white, and the flesh at first blue or white, becomes red, and the diseased parts placed in a state for healing.

Many reason, that as Kreosote has much tendency to produce inflammation, they prefer employing it with energy on ulcers in the commencement, without regarding the pain; it being only great during a short time. This pain is also much less violent in the commencement; it increases in time in proportion as the Kreosote causes the return, in diseased parts, of a new vitality; thus we will do well to act with vigor in the beginning, in order that the patient may support readily the remedy. When by energetic treatment, the bad character of the ulcer is overcome, when it has assumed a healing red color, when granulations of a healthy nature are formed, we may be content to make applications of ointment or water of Kreosote, or may endeavor to favor healing by other dessicative means, without employing ulteriorly this substance.

Kreosote has been employed, sometimes pure and sometimes mixed with water, in all cases where there is ulceration, formation of enlarged productions, discharge of pus of an unhealthy nature, &c.: some drops are placed on emollient or resolutive cataplasms. In hæmorrhages, it may be applied drop by drop; but its effect is more sensible when applied on cotton or lint.

For lotions or frictions, it is mixed in the proportions of two, four or six drops in an ounce of distilled water, or in the same quantity of hog's lard. For internal use, one or two drops have been given in a julep of four ounces. We can, by means of evaporation by caloric, or simply with sheets of paper or compresses wet with Kreosote, form in the room or bed of a patient, an atmosphere of Kreosote. It may also be introduced by aid of an apparatus, such as Woulf's bottle, advantageously modified by Richard Desrues, pharmacien at Paris."

A portion of the work is devoted to the consideration of the use of soot as a "succedaneum of kreosote." As this subject has already appeared in our journal, page 215, we refer the reader to that article as containing a more full account of the use of that substitute.

Under the head of "contrary cases," the author states that "he has collected with much care and observation all the cases not tending to confirm the good effects of kreosote, from a persuasion that in order to appreciate in a precise manner the results obtained from the administration of any medicine, it is necessary to compare the successful effects with the unsuccessful." In this we give him credit, and proceed to quote some of the cases in which it failed to produce the expected effects. He says,

"I have employed kreosote without benefit, in three cases of hæmorrhage caused by complete section of blood vessels of considerable size, and in two other cases in which there was simple incision of the same vessels." "Mr. Leperé found it unsuccessful in the treatment of syphilitic blotches of the skin." "Mr. Breschet used it for a cancerous ulcer of the nose. The day after its application, the ulcer changed its appearance and was cleansed; it was much better, but only remained so a few days, was stationary a short time, but now continues its ravages."

"M. Goupil cites two unsuccessful applications of kreosote in cases of fistula, accompanied with caries of the bone."

Martin Solon had under his care five patients, having phthisis with established cavities in the lungs. They used fumigations from kreosote diffused in water, without any sensible effect.

These are nearly all the exceptions stated, and we have quoted them at large, with a view to moderate the extravagant expectations which have been formed of the sanative properties of kreosote. That it has been and will be found highly useful in many cases where its use is recommended, it is far from our purpose to deny, nor would we willingly deter any one from administering it where there was a well founded hope of alleviating suffering or assuaging pain; but even our limited experience has taught us that many of the most vaunted of our remedies have owed their properties to the credulity of their admirers, and the *post hoc* has too frequently been mistaken for the *propter hoc.* It is therefore we consider a duty to put the case fairly before our readers, and while we are free to admit, that a new remedy possesses many properties of which we may advantageously avail ourselves, at the same time to present the reverse, that they may not too sanguinely rely upon its use to the exclusion of oft-tried and well established remedial means.

The mode of action of kreosote finally engages the attention of the author, and as regards that, he says the question is to him of little importance. "I present facts observed, and deduct (deduce) from them consequences, this is my only end." The hæmostatic agency of kreosote he attributes to its property of coagulating albumen, and we think justly. He is also disposed to attribute its influence over the cicatrization of ulcers and suppurating sores to the same cause. The ingenuity of his explanation of its mode of action in the cure of fungus granulations, &c. induces us to quote the text as follows:

"It is certain it destroys rapidly fungus granulations, hastens the separation of apthes and crusts covering the surface of certain wounds. Can we not admit by irritating the part on which it is applied, it there excites an eliminating operation, and by the formation of an albuminous pellicle, it establishes a line of demarkation between the living texture and the anormal products, the separation of which will soon take place, when they lose their vitality? Some practitioners to whom I have communicated this explanation, think it reasonable."

Its action in relieving expectoration in pulmonary catarrh and phthisis, and its operation on old syphilitic ulcers, he considers as questions of the highest interest, and that we should only enter on them with great reserve. "Their solution will remain doubtful until by multiplied experience some light is thrown on the subject."

The summary of the good effects of kreosote, we give in the author's own words, and having thus set out before our readers, the varied properties of the new remedy proposed for their use, with the following condensed view of its application to disease, we conceive we have accomplished what we proposed in the outset, to give them such an abstract, as would enable them to form definite ideas of the sanative properties of kreosote, and its claims to admission as a regular article of the materia medica.

"1 Kreosote produces good effects in burns of different degrees.

2. It heals in general ulcerated, furfurescent, squamous and crustaceous tetters.

3. It cicatrizes inveterate ulcers, arising from a syphilitic state of the constitution; it stops or diminishes the suppuration and destroys proud flesh, without altering in the least the adjoining texture.

4. It is useful in phthisis; not that it destroys the tuberculous concretions, which in the hard or soft state, act as extraneous bodies in the lungs, and become, if they are numerous, the cause of irreparable disorder; I wish only to say in cases of phthisis, it facilitates expectoration, to which it gives a favorable shade, and that it can cicatrize ulcerations of the bronchia, and some excavations of the parenchyma of the lungs.

5. Tumors, chronic indurations of the lymphatics, œdematous infiltration into the sub-cutaneous cellular tissue, are often terminated by resolution under the influence of Kreosote fomentations.

6. The success obtained from Kreosote in the cicatrization of fistulous passages, led me to presume, in case of blind external fistula, it might be tried advantageously, previous to the operation.

7. It almost always succeeds in calming the pain occasioned by carious teeth, but does not prevent its return; it will not stop the destruction of the teeth; its only effect on them is temporary.

8. It is certain, as a hæmostatic, Kreosote is a precious application; but it must be remarked it is only efficacious in capillary hæmorrhage, and bleeding from vessels of small calibre. Error in this particular should be avoided; the action of Kreosote in like cases is altogether mechanical.

9. Kreosote ought not to be employed in a continued manner; far from being useful, it aggravates the complaint, occasioning violent pains. It answers well to alternate with other applications; often with emollients, seldom with resolutives. Premature repelling by it may produce fatal consequences.

10. Finally, it produces decided relief, and sometimes unexpected cures, even when all other means have failed."

Should our labors meet the eye of the American translator, we trust he will excuse the free manner in which we have quoted and digested

his work. It appeared to us that he had not sufficiently obscured the French idiom in his translation, and we have therefore not used his words literally, although our abstracts are marked with inverted commas. It also appears to us that he has, in a few instances, not fully understood his text, and we have undertaken to render the phraseology as "we understand it." Our design not having been a literary criticism, we have not particularized the instances where they occur. We are of opinion, however, that should a second edition of his translation be required, that a careful revision will enable him to render it much more perfect in its literary character. To conclude, we recommend those who wish a particular knowledge of the subject to purchase the book, wherein they will find very interesting details of the many cases in which kreosote has been successfully employed as a curative agent. W. R. F.

On the Influence of Atmosphere and Locality; Change of Air and Climate; Seasons; Food; Clothing; Bathing; Exercise; Sleep; Corporeal and Intellectual Pursuits, &c. &c. on Human Health; Constituting Elements of Hygiène; By Robley Dunglison, M.D. Professor of Materia Medica, &c. in the University of Maryland.

We have repeatedly adverted to the progress of this work, and from the period of its first announcement, have looked forward with much interest, to the time when it should be published. We are now happy to have it in our power to furnish our readers with a brief review of Professor Dunglison's labors in the important department of medical science of which this book treats, merely premising, that our notice must be imperfect and unsatisfactory, as well on account of the difficulty of analysing an elementary treatise, as the impracticability of condensing, within such narrow bounds, the immense mass of valuable matter of which the present one is composed.

The objects of *Hygiène*, according to our author, is to inquire into the circumstances that may give rise to an aberration from health, or, in other words, into the influence of physical, and moral agents on healthy man: and thence to deduce the best means for preserving health, and for developing all the healthful energy of which the functions are capable.

The importance of these considerations has been acknowledged from the earliest periods of medical science, and duly impressed with it, the great father of physic himself, although ignorant of many of those physical laws of the universe which have been subsequently discovered and investigated, has furnished, in his treatise, *De aere, aqua, locis; De victus ratione; De morbe-passive grassantibus, &c.* some highly valuable information relating to the principles of *Hygiène*. It is to be regretted, however, that the subject is still too much neglected, both by the

medical faculty and the people at large. It should constitute an indispensable part of the education of the former; and the latter, if they would devote a little attention to its principles, might possess themselves of the means, at the expense of but little trouble, of warding off or mitigating many of the multitudinous sufferings to which their physical and moral relations render them liable. Those who devote themselves to the study of the medical profession, in this country especially, are too prone to begin at the wrong end. In their great desire to acquire a knowledge of the art of healing, they seem to forget, that a knowledge of disease forms an indispensable prelude to the successful application of remedies for their removal. Hence, instead of storing the mind with the valuable principles of anatomy, both healthy and pathological,—physiology, and general pathology, they at once direct their attention to general therapeutics, and apply all their energies in learning by rote, how many and what diseases this or that remedy has cured, while they remain alike ignorant of the properties of the remedy, or the nature of the malady. For this, the ordinary manuals are diligently thumbed over, and when the student has passed through the brief term of his pupilage, and is called to the bedside of the patient, to make an application of the rich store of knowledge which he supposes he has treasured up, he finds, when too late, that he has yet to learn the true principles of his profession. Our systems of medical education are radically defective, and this defect does not consist alone in the neglect of Hygiène, a knowledge of which is indispensable to qualify us for the important office of preventing disease, but in a total disregard, or inadequate attention to the whole of the fundamental branches, which are absolutely necessary to enable us to understand the pathological states of the system which we have to treat, and the proper method of applying remedies for their removal. The following observations of our author upon the necessity of possessing an adequate knowledge of Hygiène, are so true, that we deem no apology for extracting them necessary.

"In this country, and in Great Britain, Hygiène has not usually formed a distinct branch of University instruction, although in the different practical chairs it may have been noticed in a detached manner; but in continental Europe it has been formed into a separate subject; and—since the time of Hallé, more especially—a chair of public and private Hygiène has existed amongst the departments of medical science taught in the *Ecole de Médecine* of Paris;—'public Hygiène' being understood to comprise the study, as it relates to man collectively; whilst 'private Hygiène' applies to him individually. It is obvious, however, that this separation must be often forced and unnatural; although in many cases a clear line of demarcation may be drawn.

'The little regard,' says a recent and intelligent writer, 'which has hitherto been paid to the laws of the human constitution, as the true basis on which our attempts to improve the condition of man ought to rest, will be obvious from the fact, that, notwithstanding the direct uses, to which a knowledge of the

conditions which regulate the healthy action of the bodily organs, may be applied in the prevention, detection, and treatment of disease, there is scarcely a medical school in this country (Great Britain,) in which any special provision is made for teaching it; the pupil being left to elaborate it for himself from amid information communicated to him for other purposes. In some of the foreign Universities, chairs have been instituted for this purpose; and in France, a journal of Hygiène has existed for a short time. But in this country, with the exception of Sir John Sinclair's elaborate *Code of Health*, and one or two other publications of a late date, the subject has never been treated with any thing like the regard which it assuredly deserves. In one point of view, indeed, the omission is not so very extraordinary as it may at first sight appear. The prominent aim of medicine being to discriminate, and to cure *diseases*, both the teacher and the student naturally fix upon that as their chief object; and are consequently apt to overlook the indirect, but substantial aid, which an acquaintance with the laws of health is calculated to afford, in restoring the sick, as well as in preserving the healthy from disease. It is true, that almost every medical man, sooner or later, works out this knowledge for himself; but, in general, he attains it later than he ought to do, and seldom so completely as he would have done had it been made a part of his elementary education, to which he saw others attach importance. In my own instance, it was only when entering upon practice, that I had first occasion to feel, and to observe the evils arising from the ignorance, which prevails in society in regard to it."*

Every practitioner must have occasionally experienced the same embarrassments as Dr. Combe; and it was under feelings similar to those he has expressed relative to the utility of the department of Hygiène, that it was introduced into the University of Maryland, as a part of the duties assigned to the chair, which the author holds in that Institution."

The work under review is divided into seven chapters, which are preceded by a physiological proem, and followed by a supplementary chapter, in which is contained some medico-legal disquisitions relative to malaria. The enumeration of the heads of these chapters will serve to indicate the order in which Professor Dunglison has treated his subject, and the range of topics which he has brought under discussion. They are *Atmosphere and Locality; Food; Clothing*; *Bathing; Exercise; Sleep; Corporeal and Mental Occupations.* Each chapter is divided into sections, under which the several divisions of these subjects are considered.

The precise extent to which the human body is affected by increased or diminished pressure has not been satisfactorily ascertained. The results of investigations are so contradictory, and the modifications produced by collateral circumstances so numerous, that it is difficult to arrive at certain conclusions. The ordinary pressure at the surface of the ocean, has been estimated at fifteen pounds avoirdupois, upon every

* The principles of physiology, applied to the preservation of health, and to the improvement of physical and mental education. By Andrew Combe, M.D. New York edit. 1834, p. iii.

square inch. Man has never been able to penetrate to a sufficient depth below the surface, to experience how far a considerable increase of pressure might influence his health or comfort. Upon this point, our author observes—

"Our acquaintance with the effect of great augmentation in the density of the air is more limited, than with that of diminution in its density. The only means we possess of observing the former is in mines penetrating far beneath the surface; and perhaps in no case have these exceeded a league, and that not in perpendicular depth; whilst the phenomena, attendant upon a sudden passage into a rarer atmosphere, have been observed at nearly 23,000 feet, or upwards of four miles perpendicular height. Where the weight of the air is much increased, as in mines, it is fair to presume that the respiration should be slower on account of the same quantity of oxygen being contained in a smaller bulk of air. It has been presumed, also, that the greater density of the air may constrain the inspiratory movements, so as to render them less frequent; but this, although specious, is conjectural."

While on this subject, we will subjoin the results of some experiments recently made by M. Junod, shewing the influence of increased atmospheric presssure.

"If the atmospheric pressure is augmented by one half, the phenomena observed are:—

1st. Sensation of pressure on the tympanum which is driven inward: this gradually disappears as the equilibrium is re-established.

2d. Easier play of the respiration, deep and less frequent inspiration: in a quarter of an hour agreeable warmth of the chest, as if the pulmonary areolæ, hitherto incapable of respiration, dilated to receive the air.

3d. Pulse somewhat frequent, full, and not easily compressed: the superficial veins flaccid and even completely obliterated, so that the blood seems to return to the heart by the deep seated veins.

4th. Functions of the brain more active, the imagination vivid, &c.; in some a sensation of drunkenness.

5th. This increase of inervation affects the muscular system, the movements of which are easier and more precise.

6th. Digestive functions more active: no thirst.

7th. Salivary, renal and glandular secretion in general more copious."*

More opportunities exist for determining the influence of diminished pressure, yet even upon this point, reports and opinions are at variance; some ascribing the uncomfortable feelings experienced on ascending lofty mountains to fatigue, while others attribute them to diminished pressure. Cussini has even affirmed, that animals cannot exist at the height of 15,640 feet English; and Stevens remarks—

"I have been high enough on the Andes to have felt this difficulty had it really existed; but when I had ascended to the top of a very high mountain, after a little rest, I could breathe as freely as I had done in the morning, in a plain nearly on a level with the ocean. When we ascend, the cold increases exactly in proportion to the diminution of the atmospheric pressure; and the density in the air, produced by the cold, prevents that rarefaction in the

* North American Archives of Med. and Surg. Science, No. 5, p. 370.

atmosphere and difficulty of breathing which, except for this circumstance, would certainly occur. But, from the increased density produced by the cold in the higher atmosphere, it is probable that the air, even on the top of the highest mountain, contains nearly as much oxygen in the same volume, as that which exists on the surface of the sea."*

On the other hand, it has been rendered probable by "De Sayre, De Saussure, Hamel, Raymond, Von Humboldt and numerous others, that fatigue could have had but little or no agency; and what strikingly exhibits the accuracy of their deduction is, that the same inconveniences were sustained by Gay Lussac in his celebrated ærial voyage, when he ascended to the height of 21,735 French feet."

The experiments of M. Junod already referred to, prove that the feelings in question are neither imaginary or dependent upon temperature.

"When the atmospheric pressure is diminished by one quarter, the inverse of the above are observed; that is, distension of the tympanum, producing a sensation resembling pressure, which is also dissipated by the renewal of the equilibrium; impeded respiration, short and frequent inspiration, often dyspnœa, pulse full, compressible, frequent; turgescence of the superficial vessels of the eyelids and the lips; frequently hæmorrhage with tendency to syncope, disagreeable heat of the skin, the functions of which are increased in activity; enfeebled inervation and muscular power, diminution of the glandular secretions."†

Still it may be justly contended, that although much distress and even hazard may be incurred by a sudden transition from a very dense to a very rare atmosphere, the constitution possesses the faculty of accommodation to such an extent, as to endure even a very greatly diminished pressure without any mischievous consequences. The following observations of the author may be adduced in corroboration of this assertion.

"The highest town, of any extent, on the earth is Potosi, in Bolivia, celebrated for the mines in its vicinity. It is 13,265 feet above the level of the Pacific ocean. Two hundred years ago, it is said to have contained 160,000 inhabitants, but the number is not now greater than 12,000. Perhaps the highest inhabited spot on this hemisphere is the farm of Antisana in Quito, the elevation of which is 13,400 feet. Yet the human family are capable of subsisting at these lofty elevations with the same facility as amidst the arctic snows when once habituated to them;—inconvenience being felt by new settlers only, and even these, by the gradual ascent, have the different organs accommodated to the new external relations."

The observations on temperature are highly interesting. The facility with which the animal economy adapts itself to thermometrical changes of the atmosphere is well known, as is also its remarkable capability to maintain the same temperature under all degrees of heat and cold compatible with the preservation of life. Yet with all this plastic and con-

* Observations on the healthy and diseased proportions of the blood, p. 61. London, 1832.

† North American Archives.

servative power, sudden changes of temperature are exceedingly detrimental to health. Bad effects may result from either a sudden elevation or depression of heat, and those latitudes in which the degree of variation is the greatest, are always more unhealthy, as regards particular classes of diseases, than those which are more equable and steady. In the following observations of Professor Dunglison, relative to the manner in which the elevated temperature of torrid regions gives rise to disease we cannot concur:—

"The constant evaporation by cutaneous and pulmonary transpiration maintains the absorbents of the intestines in a state of irregular erethism, and hence disposed to assume a morbid condition under favorable exciting influences. In this way we account for the various derangements in the mucous membrane of the intestinal tube, which are so frequent in warm climates, and seasons;—diarrhœa, dysentery, cholera, &c. with those universal attendants upon inflammation of the upper portion of the small intestine,—liver diseases."

Simple evaporation by the pulmonary and cutaneous transpiration, is not, we are inclined to think, competent to produce the effects attributed to it, and we doubt much if the morbid condition of the different organs "disposed to take place under favorable exciting influences, does not originate in some other source than the "state of irregular erethism of the absorbents." We think it probable, indeed, that the author has not fully expressed his meaning, especially as further on, he speaks of elevated temperature impairing nervous energy.

But while we object to this doctrinal point, we fully concur in the following, which is not as much attended to as it deserves—

"The excitement, prevailing in the lining membrane of the duodenum, into which the biliary ducts pour their bile, is propagated along those ducts, and arouses the liver to inordinate secretion, or produces other functional, or organic diseases in that viscus. This state of irritation of the duodenum, induced too often by undue quantity, or quality of aliment, is that of nine-tenths of the affections termed *bilious*. A person, after having dined heartily on a substance difficult of digestion, is affected with heartburn, distension, flatulence, great uneasiness, and constant eructation; yet, although the cause is manifest, he prefers to have the symptoms ascribed to a predominance of bile, rather than to a circumstance, the belief in which would tend to curtail him in the slightest degree of his enjoyments; and thus we hear of *bile*, instead of *goose*, *duck*, &c. in the stomach."

We shall pass over the observations on the effects of low temperature, hygrometric conditions, atmospherical vicissitudes, light and electricity, merely with the remark, that they contain many valuable reflections.

The next section, which treats of atmospheric vitiations, embraces topics upon which much speculation has been expended, but without eliciting much positive information. This is more especially true of those imponderable terrestial emanations, which are so destructive of human life, yet so subtle as to elude alike the most searching test of the

chemist, and the delicate indications of the eudiometer. Independently of these, however, there are atmospherical vitiations of which we can form a more accurate appreciation.

Illustrative of the fatal effects which arise from an atmosphere vitiated by the respiration of a number of individuals, crowded into a confined place incapable of ventilation, Professor Dunglison refers to the melancholy and well known instances of the black hole of Calcutta, and Saint Martin's round house in London. The carbonic acid gas generated in such cases, being heavier than atmospheric air, accumulates below the apertures through which ventilation might take place, and cannot consequently be displaced by the ingress of fresh air. Examples of the deleterious effects of carbonic acid gas are too numerous to require a particular notice. The same remarks may be made of carburetted hydrogen, or *fire damp*, which before the discovery of the safety lamp by Sir Humphrey Davy, proved so destructive to miners. The following remarks are highly important:

"Sulphuretted hydrogen is an extremely deleterious gas, killing instantly when respired in a pure state, and it is so powerfully penetrant that it is sufficient to place an animal in a bag of the gas, without any approaching the mouth, for it to act fatally. Even when mixed with a considerable portion of air it may prove destructive. Dr. Paris refers to the case of a chemist of his acquaintance who was suddenly deprived of sense, as he stood over a pneumatic trough in which he was collecting the gas; and from the experiments of Thénard and Dupuytren it would seem, that air containing a thousandth part of sulphuretted hydrogen kills birds immediately. A dog perished in air containing one-hundredth part, and a horse in air containing one-fiftieth. When breathed in a more diluted state, it produces powerfully sedative effects, the pulse being rendered extremely small and weak; the contractility of the muscular organs considerably enfeebled, with stupor, and more or less suspension of the cerebral functions; and if the person recovers, he gains his strength very tardily. Fortunately, we possess, in chlorine and the chlorides, agents capable of acting chemically on this substance, and of completely removing all deleterious agency. There is, consequently, no reason why injurious consequences should result from the requisite operations of emptying the privies, which is an extensive business in many large towns, especially in such as are not well provided with water, and with common sewers."

There is perhaps no more frequent cause of complaint in large cities, than the unpleasant, and occasionally offensive, emanations, which are generated by certain trades and occupations. Scarcely a year passes that there is not a presentation of some establishment of this kind, and ignorance upon such subjects, has often led to protracted and expensive litigation. The following observations, therefore, are valuable, as pertaining to a branch of public hygiène or medical police:

"The air is apt to be loaded with *emanations* from animal and vegetable substances in a state of decomposition; and there are many trades—such as those of the gutspinner, the hartshorn manufacturer, the dealer in cat's and dog's meat, technically called a *knacker*—which are carried on in putridity,

but we shall endeavour to shew, that the admixture of such emanations with the air does not affect public salubrity to such an extent as might be imagined, although the nervous, and the delicate, before they become accustomed to the offensive odours, may be more or less disagreeably impressed. The same may be said of butcheries, dissecting rooms, and cemeteries."

Professor Dunglison has discussed, at some length, the doctrines generally entertained on the subject of malaria.

"By some writers," he observes, "it has been ascribed to vegetable putrefaction; by others to aqueous or to animal putrefaction, or to different combinations of these; but we shall attempt to show that there is no positive—no historical evidence—that any one, or any combination, of these varieties of putrefaction does ever occasion, even in marshy districts where the poison exists in the greatest abundance, malarious or miasmatic disease."

He examines the leading arguments which have been advanced in support of each of these opinions, and places in opposition to them the numerous facts which have been collected by Ferguson, and others, in support of an opposite opinion. He appeals to the instances related by the author just referred to, of the extensive prevalence of intermittents on the sandy plains of South Holland, and in different parts of Spain, where the soil was either a bed of sand, destitute of all admixture of vegetable matter, or perfectly exsiccated by solar heat, with its vegetation "burnt up, and its putrefaction rendered as impossible as the putrefaction of an Egyptian mummy." Dr. Ferguson remarks "that, in the most unhealthy parts of Spain, we may in vain, towards the close of summer, look for lakes, marshes, ditches, pools, or even vegetation," and that, although as prolific of endemic fever as Walcheren, it is one of the driest countries in Europe. Professor Dunglison adds to these arguments, the important one, that in many situations where vegetable matter is most exuberant, where it is constantly undergoing the process of decomposition, malarious diseases are frequently unknown. He thinks,

"Our knowledge on all this matter seems to be limited to the fact, that in particular climates, and under certain unknown and inappreciable circumstances, the bottoms of our stagnant pools, mill-ponds, marshes, &c. become miasmatic—a knowledge which we acquire by lamentable experience, and by that alone—that the soil becomes more or less exposed by the evaporation of the water in summer and autumn; and, during the heats of the latter season more especially, it gives off the mysterious, subtile, and pestiferous agent, which we call *malaria*."

The author objects, we think properly, to the opinion of Professor Charles Caldwell, who seems to think that the decomposition of succulent vegetables is not the only source of these emanations, but that even the dissolution of timber which has been dry, when exposed to moisture, may become a source of them. We question very much if the wooden facings of which wharves are composed, ever become a source of mias-

mata, or that the mere decomposition of vegetable matter, in any form can generate them. If this were their source, the pioneers of our overgrown forests, who, during the first years of their residence, are literally surrounded by masses of decaying vegetable matter, resulting from the gradual destruction of the timber which is merely *belted*, and suffered to meet destruction by time, would certainly fall martyrs to the poisonous exhalations to which they are exposed. Yet, in many places where other causes do not exist, they remain perfectly healthy. We should, indeed, as Professor Dunglison has correctly remarked, be constantly exposed, in our ordinary habitations, to insalubrious exhalations, and ever liable to malarious diseases. Every house covered with shingles, every wooden dwelling, especially if surrounded by dead trees, &c. ought to be a prey to them. Professor Caldwell has in this matter adopted a hypothesis which, so far as we can perceive, is not supported by a single fact, or a single tittle of evidence, which has the slightest claim to be considered valid. We will, indeed, make the same remark with regard to all the modifications of the hypothesis which maintains the vegetable origin of malaria; and that which refers it to animal decomposition rests upon evidence still more slender.

In the next section we have some interesting observations on the influence of locality, and the salubrity of soils; also on the comparative mortality of different countries, illustrated by numerous tables. These we shall be obliged to pass over. As regards those localities or soils which are most apt to generate malaria, although we may generally regard marshes as the most abundant source of these emanations, we have no positive means of determining by mere examination, or even by chemical analysis, what localities or soils will be healthy or unhealthy. Italy presents a melancholy example of this truth, where

> "In florid beauty groves and fields appear,
> Man seems the only growth that dwindles here."

The observations of Professor Dunglison on change of air, and on the influence of the seasons, contain much useful information, for which we must refer to the work itself.

On the subject of residence, we are rejoiced to see that Professor Dunglison has supported the claims of St. Augustine, as a winter residence for invalids. This is a subject upon which we think every American ought to feel much interest; but we regret to see, that in relation to this point, as well as most others which are American, those who should be most ready to appreciate the benefits Providence has put at our disposal, and the innumerable advantages our wide extended country affords, are the first to decry them. Nothing that is American possesses any value in the estimation of ourselves, and in our perpetual longing after things beyond seas, we spurn and neglect benefits at home, possessed perhaps by no other country on earth.

This feeling is carried to such an extent in the United States, as to exercise a most pernicious influence. Our climate, which in some respects is confessedly bad, is painted in such distorted colors, even by Americans, that the invalid is taught to believe his only salvation rests in fleeing his natal country, and seeking health under the far famed skies of some foreign land. Nothing short of a voyage to those healthful regions will suffice, and in the prosecution of this one object, when all is gone but hope, he tears himself from home and friends, to seek renovated existence in a climate generally more inimical to health than many he leaves behind. Even the damp and murky skies of England are often preferred to the mild and balmy air of some of the southern parts of our country; and we have known many persons, laboring under the inceptive stage of phthisis, hasten the fatal termination of the disease by visiting Europe, in quest of those benefits which they have in the end failed to find, but which they might at first have realized at home. In relation to St. Augustine, we do not speak unadvisedly. As a winter residence for those who are affected with the stages of phthisis for which climate is capable of doing any thing, we unhesitatingly declare, that we know of no part of Europe superior to it, and we believe that there are few capable of affording the same advantages. We have seen its benefits most unequivocally displayed; and where that regard is had to the condition of disease, which should always be observed in seeking the benefits of change of climate, we believe it will accomplish as much as almost any other. That it has not restored those who have gone there laboring under purulent expectoration, and worn out by hectic, is no argument against it, for what climate can restore organs which the ravages of disease have destroyed? That it may be liable to the objection of being exposed to the chilling easterly winds, setting in occasionally from the ocean, we will not deny; but these are seldom of so bleak a character as to be injurious, and they are more than counterbalanced by other advantages. There may be, likewise, some want of comfort; but this is the fault of the people, and not the place. Let but a tithe of the sums which are uselessly squandered in visiting foreign countries for health, be directed to St. Augustine, and then all those comforts will be afforded which the invalid can require. We think the able and candid letter of Dr. Porcher, which Professor Dunglison has introduced upon the subject of the climate of St. Augustine, cannot fail to satisfy those upon whom facts can exercise any influence. There are those, however, unfortunately not few in number, who are so blinded by a species of idolatry for European customs, and every thing European, that neither facts nor arguments will exercise any influence upon them, when the principle involved is any thing pertaining to their own country.

Professor Dunglison has taken a general view of the subject of residence and change of climate, and has in this portion of his work con-

densed a great fund of useful information, which we shall be obliged to pass over.

We shall also pass over the chapter on food. It contains much interesting matter, and several tables are appended, shewing, from experiments, the comparative digestibility of different aliments. Many of these results are valuable, yet they cannot be erected into fixed and unvarying laws, on account of the extent to which such experiments must be influenced by collateral circumstances. We should be pleased to select some parts of the author's observations upon these points, but the subject is already worn thread-bare by the innumerable *manuals* for the preservation of health, with which the public has been inundated within a few years. Strongly as we reprobate the vice of intemperance, we concur fully with the author in the following remarks, relative to the noble exertions of those who are doing so much to correct the evil.

"Too often, in their laudable enthusiasm, the writers on the great subject of temperance have quitted the strong moral basis on which the abuse of ardent spirit rests, and have attempted to shew, upon data totally inadequate, the physical evils, that result from the occasional moderate use, not only of ardent spirits, but of wine, and almost every variety of fermented liquor."

The author makes some good remarks on the use of tobacco, but we have not room to notice them. We shall be prevented, by the same cause, from taking any notice of the chapters on clothing, bathing, exercise, sleep, &c., further than to observe that they contain much valuable information.

On the subject of mental occupations, we think the following remark is not sufficiently qualified:

"Few are injured by study, unless the frame is unusually excitable, or the mental application unusually protracted."

We are free to confess, that many individuals may devote themselves with ardor to intellectual pursuits, throughout a long life, without experiencing much more injury than what may be reasonably attributed to a sedentary habit; yet we know some instances to the contrary, even where the frame has not been "unusually excitable," nor the pursuits carried to that extent to which they frequently are by some of our philosophic Germanic brethren. We think we could adduce not a few facts to corroborate our opinion, did our limits permit; since there are, as we suspect, too many, who, under the influence of the incessant cerebral excitement which is kept up under intense and protracted intellectual exercise, find their digestive functions gradually undermined, and in the end have their whole nervous sytem involved in a morbid disarray, which disturbs the natural play of the organs, and lays the foundation for a long catalogue of diseases. Notwithstanding our author's objections, we think there is some truth in the remark quoted from Pinel: that "men of exalted intellect perish by their brains," and that "such is the noble end of those

whose genius procures for them that immortality, which so many ardently desire."

We subjoin the following extract, partly on account of the truth of the principles, and partly to show the importance of observing some regularity or system in intellectual pursuits.

"But although to an overwhelming proportion of those who devote themselves to quiet and regular intellectual pursuits, and who attend properly to collateral circumstances, the excitement of the brain may be salutary rather than prejudicial, there may be a few—a very few—who experience mischief from close mental application. Such are they, as we have said, of frames unusually impressible, and in whom, when any organ is thrown into unwonted exercise, a sudden afflux to it of vital energy ensues, which, in the case of the brain, might give rise to headache, confusion of thought, with the whole train of nervous symptoms. The individuals thus circumstanced, we say are few, although it is a common excuse, urged by such as are indisposed to intellectual application, and is generally received as valid. The evil, too, may be greatly obviated by habit—by never forcing the intellectual powers, but bending them daily to their object, until they become accustomed to the exercise; and being especially careful not to permit them to interfere with those collateral agencies, the regularity of whose application is essential to health. When the mind is well disciplined, it is surprising what may be accomplished by a proper use of time. No one, in modern times, has surpassed, in productive capabilities, Sir Walter Scott: yet, by proper economy of time, he was enabled to avail himself, as fully as the most unoccupied, of the pleasures of social and domestic intercourse. When asked by Captain Hall, how many hours a day he could write for the press with effect, he replied: "I reckon five hours and a half a day is very good work for the mind, when it is engaged in original composition. I can very seldom reach six hours, and I suspect that what is written after five or six hours' hard mental labor is not worth much." On being asked how he divided those hours, he said: "I try to get two or three of them before breakfast, the remainder as soon after as may be, so as to leave the afternoon free to walk, or ride, or read, or be idle."

We must here bring our imperfect notice to a close, not for the want of interesting matter to select, but because we have not space to devote to a more extended analysis. To compensate for this, we must refer to the book itself. Professor Dunglison has displayed much judgment and ability in selecting and digesting his materials, and has furnished a better exposition of the elements of hygiène, than can be any where found in the English language.

COLLECTANEA.

Apis vero ratio media est; quæ materiam ex floribus agri et horti elicit, sed tamen eam propria facultate vertit et digerit.—Nov. Org.

1. *Homœopathic Experiments.*—M. Andral, at the Hôpital de la Pitié, has been putting to the test of experiment the homœopathic doctrine since November. These experiments are not yet concluded, but we shall give the results as far as they go, which are quite conclusive against the views of Hahnemann. M. Andral treated the patients submitted to homœopathic strictly in accordance with Hahnemann's principles. The symptoms were combatted by medicines, the special properties of which were pointed out by the German physician, and which, to insure the greatest exactness, were made up at the establishment of Guibourt, to which the homœopathic physicians send their patients. The regimen was carefully watched, and was altogether in accordance with that recommended by Hahnemann. It was composed of broth without salt or vegetables, of paps or of milk pottages, and when the patients could eat, they were allowed bread and wine, meat which had served to make broth, and roast, rarely fish. Vegetables were never given to them, nor was any of their food seasoned. For drink they had sugar and water. During the treatment all external medication was interdicted. It is impossible with all these precautions, not to have sufficient *data* to judge of the doctrine, especially when the facts are so numerous, and the physician so acute. The facts were collected with the most minute attention by M. Vernois, one of the *internes*.

In fifty-four applications of the homœopathic treatment, eight patients alone derived any benefit, which continued without the use of any other plan of treatment, and forty-six were as bad some days after the administration of the globules as before. It ought, however, to be mentioned, that the state of seven of them was slightly ameliorated on the morning after they took the medicine. But what were these cases? The first was a case of intercurrent pain, which had existed for some days; the second was a case of *angina*; the third one of rheumatic pains; the fourth, intercurrent cephalgia in a phthisical patient; the fifth was a case of stunning in a man subject to cerebral congestion; the sixth a case of diarrhœa following constipation; the seventh one of rheumatism at the 18th day; and eighth, a case of a slight pain which came on during chronic *gastro-enteritis*.

The medicines employed by M. Andral, were *aconitum*, *arnica*, *belladonna*, bryony, camphor, camomile, *colchicum*, *ipecacuanha*, *hyoscyamus*, *opium*, soluble mercury, *nux-vomica*, metallic lead, *Pulsatilla nigricans*, and tin.

From the month of January, M. Andral treated thirty-five patients on homœopathic principles. Of these, eighteen were men, and seventeen women. Five were submitted to the *aconitum*, four to the *arnica*, five to *belladonna*, five to bryony, one to camomile, three to colchicum, three to hyoscyamus, one to opium, two to soluble mercury, three to *nux-vomica*, one to lead, and two to the *Pulsatilla nigricans*. We throw the results, &c. into a table.

Case	*Medicinal Substance.*	*Disease.*	*Predominant Symptoms.*	*Effects.*
1	Aconitum, 24th dilut.	Gastritis.	Intense fever.	2 pulsats. less in the 24 h. & variola in morning.
2	do.	Intense quotid. fever.	Impulse of the heart.	None.
3	do.	Acute amygdalitis.	Intense fever.	Lowering of the pulse & dimin. of the disease.
4	do.	Tubercles.	Frequency of pulse.	Diminution of the pulse.
5	do.	Acute arthritis.	Do.	Severe headache.
6	Arnica, 6th dilut.	Pulmon. tubercles.	Violent stunnings. (*violens etourdissemt.*)	None.
7	do.	Cerebral congestion.	Strong stunnings.	The patient declared himself immed. relieved.
8	do.	Dropsy of pericard.	Stunning & vertigo.	None.
9	do.	Dysmenorrhœa and chronic gastritis.	Most inten. headache.	No immediate effect, amelioration, 3d day.
10	Belladonna, 24th dilut.	Hemiplegia.	Disturb. of vision.	None.
11	do.	Bronchitis.	Obstinate cough.	do
12	do.	do.	do.	do.
13	do.	Affec. of optic nerve.	Considerable disturbance of vision.	do.
14	do.	Affection of heart.	Stunning.	do.
15	Bryony, 30th. dilut.	Intermittent fever.	Wandering pains.	do.
16	do.	Hypertro. of heart.	Severe pain in the *epigastrium.*	do.
17	do.	Acute arthritis.	Pain in the shoulder.	do.
18	do.	Pleurodynia, bron.	Cont. fits of coughing.	do.
19	do.	Chron. gastro-enter.	Severe pain in left knee and shoulder.	do.
20	Colchicum, 15th dilut.	Acute arthritis.	Severe pain, with redness and swel. of the two wrists.	Diminution of the pains.
21	do.	Lumbago.	Viol. pains in loins.	None. Patient was bled.
22	do.	Pulmon. tubercles.	Not on the left side.	Diminution of pain.
23	Hyoscyam. 12th dilut.	do. do.	Violent cough.	None.
24	do.	Bronchitis pleuritis.	do.	do.
25	do.	Bronchitis.	do.	do.
26	Soluble mer. 6th dilut.	Mercurial tremb.	Of the superior and inferior members.	do.
27	do.	Syphilis & ulcerats.	Of glans.	do. Ulceration increased, destroyed frœnum, and was stopped only by mercur. oint.
28	Nux vomica. 24th dilut.	Dysmenorrhœa and chronic gastritis.	Severe difficulty of breathing.	do.
29	do.	do.	Dyspepsia.	do.
30	do.	Amenorrhœa.	Desire of vomiting.	do.
31	Pulsat. nigr. 24th dilut.	Chron. gastro-enter.	Diarrhœa.	More sensible.
32	do.	Chronic gastritis.	Colics & Diarrhœa.	None.
33	Camomile, 12th dilut.	Diarrhœa.	Without colic.	do.
34	Opium, 6th dilut.	Affect. of the uterus, and of the heart.	Obstinate constipat.	do.
35	Metal. lead.	Obstinate constipat.	For eight days.	do. The constipat. yielded to purgatives.

From the above facts, it would appear that the homœopathic plan of treating diseases is totally inert, and can be useful only as a *placebo* to hypochondriacs and nervous women, by relieving them from swallowing the manifold drugs with which they think it their duty to burden their stomachs.—*Bulletin Generale Therapeutique.—Ed. Med. and Surg. Jour. Oct.* 1834.

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2. *Case of Spinal Irritation.* By S. S. Walker.—April 1st, 1833, I was called to see Mrs. A———, the mother of four children—of strumous habit; said to be almost dead with consumption. I found her sitting in a chair, pale, weak and emaciated, and panting for breath, as though excessively fatigued. She had violent palpitations of the heart; fits of asthma at night, and occasionally exacerbation of fever, followed by copious sweats. There were neuralgic pains in the side, neck, &c. with a sense of constriction across the breast; quick hurried respiration; violent cough in the mornings, with mucous expectoration; gastralgia and other symptoms of indigestion, with colic pains; universal and excessive tremors, with a weak voice, and a hurried and fearful manner of speaking. Examined her spine—found the last dorsal and the first lumbar vertebra slightly distorted by a fall from a wagon, twelve years previous, and extremely tender to the touch; the pains on pressure seemed to strike through her, and were reflected principally upon her breast, diaphragm, and stomach.

I applied three cups over the seat of irritation, and took eight ounces of blood. The tremors ceased before the cups were done drawing. I then applied a blister, and gave her the following: ℞ Blue Mass. gr. 8. Pulv. Dov. gr. 12, at night, to be followed with Seidlitz pulv. in the morning. Called in three days after, and found her so far restored as to decline any further services. The symptoms of indigestion, cough, nervous excitement, &c. left her in a few days completely restored to health.—*Western Medical Gazette, January,* 1835.

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3. *Sick or Nervous Headache.* By M. H. Houston, M.D.—It has been usual, and is perhaps generally the practice, to prescribe the free use of cathartics in this affection. We cannot but think this practice has been abused. The remote cause of the disease is irritability of the system from impaired digestion. Now, cathartics of all kinds, however gentle in their operation, and however judiciously administered, have the effect, if given alone, of impairing in a greater or less degree the tone of the stomach and bowels; and as want of tone in these organs is the cause of that irritability of system upon which the disease depends, these remedies, by increasing the predisposing cause, must always do harm. In order to prove serviceable, they must be judiciously combined with tonics. As to their use during the paroxysm—before such as should be administered will have time to operate, the disease will get well of itself.

From the pathological views we have laid down, the objects to be had in view during the paroxysm, are to allay the irritability of the stomach, and with it that of the general system—to arrest the morbid secretions from this organ, and by imparting tone, to excite it into healthy action. These purposes are best accomplished by a combination of tonic and anodyne medicines. The

articles which I have found most prompt and efficient in their action, are the sulph. or acet. Morphia, and the sulph. Quinine.

From what has been said, the modus operandi of these medicines will be readily comprehended. The promptitude and permanency of the relief afforded by them, are as gratifying to the physician as they are often joyful and unexpected to the patient. A pill composed of from one sixth to one fourth gr. Morphia, with from 2 to 4 of Quinine, should be taken at the onset of the paroxysm, and repeated in an hour or two, if relief is not obtained by the first dose. The Quinine and Morphia may be made into pill with the extr. Gentian. I do not pretend to say that this treatment will relieve in all cases, but I hesitate not to pronounce it the most efficacious of any I have as yet seen adopted.

In some cases attended with harshness and dryness of the skin, to the above pill I have added, with good effect, 1 gr. of Ipecac,* and occasionally, when costiveness existed, 1 or 2 grs. of Aloes. The relief generally perceptible in from ten to twenty minutes.

A gentleman who had long suffered from repeated attacks of the disease in its worst form, and who, with the advice of several physicians had used cathartics of different kinds, with the effect only of increasing the frequency of the paroxysms, applied to me whilst laboring under a violent attack of the disease. As there were indications of acidity present, I gave him some Carb. Sodæ† in solution, and one of the above pills. In fifteen minutes the relief was complete,—he said I had practiced upon him a "*charm,*" and it was with difficulty he could be persuaded, that for that day, at least, he would have no return of the headache. It did not return, however, and he has since used the pills and prescribed them to his friends in different parts of the country, similarly afflicted, and as he says himself, with never-failing success.

The pills seem to have no effect in increasing the disposition to costiveness, but rather the reverse. They also have appeared to me to lengthen the intervals between the paroxysms, and to assist materially in the complete eradication of the disease.

The means best adapted to prevent the recurrence of the paroxysms, are the proper regulation of the bowels, by diet, if possible, if not, by very gentle laxatives, and the constant use of some mild vegetable tonic. As a laxative, aloes, in doses of a grain or two every two or three hours, will generally prove sufficient, and we think it greatly preferable to the rhubarb so generally used. Independent of its cathartic properties, aloes acts directly on the liver, the organ most frequently at fault, and is also a valuable stomachic.

The tonic which we have generally recommended, is a cold infusion of the wild cherry tree bark. The small quantity of prussic acid contained in this bark, doubtless exerts a salutary influence: hence a cold infusion is the best preparation, since this active ingredient would be evaporated by boiling. It

* We have sometimes directed an emetic of lobelia or mustard at the onset of a paroxysm of this disease—and generally with the happiest effect—sometimes preventing its recurrence for several months.—R.

† A physician of our acquaintance, who is addicted to this complaint, mentions that he generally resorts to the Aq. Ammon., in doses of from half a drachm to a drachm, and usually experiences speedy relief.—R.

has also to recommend it, its cheapness, abundance, and the ease with which it can be procured.

It will be recollected, that the treatment here recommended is only applicable to cases of sick or nervous headache, and as it would prove decidedly injurious in headaches arising from other causes, it may be proper to notice some of the diagnostic symptoms.

Sick headache generally returns *periodically*, and when we meet with an individual, who has not been subject to its attacks, complaining of his head, this circumstance alone should put us on our guard, and render us more circumspect in the treatment. When it is accompanied with coldness of the extremities, weak pulse, nervous tremors;—when it is relieved by the recumbent posture, or any other circumstance which favors the flow of blood to the head, we prescribe the tonic and anodyne without any hesitation. If, on the contrary, the extremities are unnaturally warm, with a full and strong pulse, —if the skin generally is hot and dry, and the anguish increased by the recumbent posture, it would be but adding fuel to the flame to administer these remedies. We deem it unnecessary to say more on this subject, since the marks which characterize these opposite states of the system are so striking, as to render it scarcely possible for them to be mistaken by persons of ordinary intelligence and observation. In confirmation of the correctness of our views, we might adduce almost innumerable cases, but this we deem unnecessary.—*Ibid.*

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4. *Over-excitement of the Brain.* By Edward Warren, M.D—The following case is, perhaps, one of little novelty either as to the symptoms or the mode of treatment; but it was interesting to me, both on account of its happy result, and because I deem every thing interesting which relates to disease of the brain—to the mysterious connection between the mind and the body.

On the 20th of January last, I was requested to visit the son of one of my patients, a lad about nine years of age, whom I had previously noticed for his remarkable intelligence and vivacity.

His mother informs me that a few months ago, he was removed from the school he attended to a higher one, where his emulation and love of study were excited in the utmost degree. All his time both at school and at home was spent in hard study. For several weeks past he has appeared listless, dull, and languid, taking no interest in play, and averse to active exercise or exertion of any kind. He is much better, however, in the day than in the night; he cannot distinguish objects by candlelight, and he fancies he sees people who are not in the room, and strange objects of various kinds. His mother thinks his eyes are unusually dull and unnatural in appearance. The pupils, in fact are, largely dilated. His sleep is restless and attended with muttering, and the appearance of great distress. He has occasional headache, no appetite, tongue coated, bowels rather costive. On careful examination of the spinal column, I find no tenderness or other marks of disease.

I ordered him to be kept at home from school and from books, but allowed free exercise in the open air in pleasant weather. To take an emetic of ipecac, and afterwards a pill, nightly, containing a grain and a half blue pill

with a small quantity of opium. A gentle laxative when required. Diet to consist of light farinaceous food.

Jan. 24th. Health somewhat improved. Appetite better, but sleep and nocturnal visions as before.

Apply four European leeches to each temple; rub the back of the neck with antimonial ointment; take fifteen drops of tincture of muriate of iron, daily.

Jan. 26th. Much better. Appetite good. The leeches took away a large quantity of blood, and the pupils almost immediately resumed their natural appearance. Nocturnal visions and bad sleep still continue.

Omit the pills. Take four grains of Dover's powder nightly.

Jan. 31st. Much better during the day. Sight in the evening as before. Sees nothing but a glare of light, and fancies he has leeches all about him. Sleeps better. Continue iron, and use the ointment freely.

Feb. 6th. Perfectly restored to his former health and spirits. Appetite strong. Well in every particular. Wishes to go to school. Directed him to be kept at home a week longer.

This case affords an instance of the manner in which the most interesting children, and those of fairest promise, may be destroyed in the usual course of education, by over-stimulating the brain. Had the disease been allowed to go on, and the lad remained at school a short time longer, he must have fallen into that state of hopeless and complete exhaustion of the nervous and sensorial power, which forms one of the most melancholy spectacles the physician is ever called to witness.—*Boston Medical Magazine, February*, 1835.

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5. *Case of Dislocation of the Lens in both eyes.* By JOHN WATSON, M.D.—Benjamin Wilcox, a seaman, born in New England, aged 30, has had tremulous irides as long as he can recollect. His sight has always been weak. About ten years ago he received a blow from a rope which brought on inflammation. Since the receipt of the injury, these frequent attacks have materially injured his vision, and for the last seven years this eye has been of little use, although there is still a slight degree of vision yet remaining. The cornea is clouded, and the whole anterior chamber has a dull bluish cast. But what is most singular, is, that when he entered the Hospital, May 20th, 1832, the lens was discovered in the anterior chamber of the aqueous humor, floating before the relaxed and tremulous iris. On the day subsequent to this, no appearance of the displaced lens was to be discovered. For dilating the pupil the eyelids were besmeared with the dilute extract of stramonium, and again on the second day after admission the lens was found floating in front of the iris; it appeared to have lost its translucency. The patient was directed to recline backwards, and in doing so, the lens also fell backwards into its natural situation. Until within a few days of his admission, the patient was ignorant of this condition of his left lens; but he stated that for three and a half years he had had a similar displacement of the lens of the other eye; but at present the right eye is clear, and in every respect appears perfect, with the exception of the tremulous condition of the iris as before noted; yet the patient has very imperfect vision in this organ, for although it is more useful to him than his left eye, he has still not sufficient light to distinguish letters even of the largest print. The lens of the right eye, as he says, disappeared from the anterior

chamber a few days before he entered, and it has not since fallen forward; according to his own report, he can plainly discover it, apparently like a bright round spot in one corner of the eye. Both irides are nearly immoveable by this impression of light, yet the pupils do contract just sufficiently to be observed when the eyes are suddenly opened. There appeared to be no reason for doubting the patient's statement in relation to his right eye. Thousands, he says, have examined it, and many physicians of New England have taken minutes of his case. They have probably not noticed the like affection of the right eye, owing to the dimness of the cornea. His first notice of this peculiar affection was a severe and sudden pain in the eye while he was stooping forward. On requesting some one near him to look into the eye, he was informed that a little bag of water hung immediately before the sight. He lay down, covered his face with two or three folds of a handkerchief, and all at once the pain subsided and the little bag of water disappeared. Subsequent to this, whenever he stooped, especially if in a dark place, or during a dark day, the lens would fall forward. In clear weather this was not the case, and on cloudy days, if the lens was not down, he could at will displace it, and this he was often induced to do, to satisfy the curiosity of his friends, or of strangers. But while the sun shone, or in a strong light, he could not do this. While the lens is down, there is always pain in the eye. We have tried the effect of convex glasses, and his sight is much better when he wears them. He is a stout, healthy man, and has never suffered from any constitutional disease. He had visited the Eye Infirmary prior to admission, but neither there nor at the Hospital was it considered proper to attempt any operation for his relief.

Note.—For another case of the preceding affection, see Medico-Chirur. April, 1833, page 299, from Damour's.—*United States Medical and Surgical Journal, January*, 1835.

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6. *The external use of the Iodo-hydrargyrate of Potassium.* By W. C. Wallace, M.D. Surgeon to the New York Institution for the Blind.—After being made acquainted by Dr. Channing with the salt named by him iodo-hydrargyrate of potassium, I prepared a quantity in the way that he has directed. During the process, I happened to wet the points of my fingers with the solution by lifting the plate in which it was evaporated. A few days afterwards, I noticed that the fingers that had been touched were less plump, and the skin was shrivelled apparently from the fat beneath it being partially absorbed. From the nature of the constituents of the salt, and from its great solubility, added to the circumstance noticed, I determined to try its efficacy in promoting the absorption of tumors. I had a case of obstinate ophthalmia tarsi, in which I had been endeavoring to lessen the thickened meibomian glands by external friction with mercurial ointment, which I changed for an ointment composed of ten grains of the new salt and an ounce of lard. This was daily rubbed for about fifteen minutes at a time on the thickened eyelids, care being taken that no part of it touched the conjunctiva. Weak red precipitate ointment to the edges of the eyelids, and a very weak collyrium of corrosive sublimate, which had been effectually used for some time, were continued. In about three weeks the patient was well. Friction with this ointment removed several cholazia, which not being softened by mercurial ointment, I had proposed to extirpate with the knife.

In the proportion of half a drachm of the salt to an ounce of lard, the ointment is very irritating, producing a peculiar herpetic eruption. This preparation has the double advantage of promoting absorption, and of producing counter-irritation. Four cases of ganglia at the wrist, which were all that I had an opportunity of treating in this way, were soon cured.—*Ib.*

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7. *Ventricles of the Brain.* By James Macartney, M.D.—It is a generally received opinion that the ventricles of the brain are cavities or hollow spaces containing some liquid. This error has arisen from the common modes of dissecting the brain, which necessarily separate the surfaces of the ventricles from each other. If, however, the dissection be performed without disturbing the natural position of the parts, not the slightest appearance of cavity or interspace presents itself. The sole use of the ventricles, therefore, seems to be merely to gain an extent of surface necessary to the development of the peculiar organization of the brain. Apparently there is less superficies in proportion to the magnitude of the mass of the brain in man than in that of animals; but if we calculate the depth of the surfaces between the convolutions of the cerebrum and on the branches of the arbor vitæ in the cerebellum, together with the internal surfaces, we shall find that the superficies of the human brain is greater in relation to its bulk than that of any other animal. In addition to the surfaces already known, Dr. Macartney has ascertained the existence of ventricles (so called) in the bulb of the olfactory nerves, and in the optic thalami of the human adult brain. In the thalami the distinction of surface is obscure, but in the olfactory tubercles it is sufficiently plain.—*London Medical Gazette*, 1834.

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8. *Tumor of the Cerebellum with remarkable course of the symptoms.* By Dr. Abercrombie.—A gentleman, aged 34, in the year 1825, first began to be affected with occasional attacks of headache, which were usually accompanied by vertigo and dimness of sight. In 1827, the pain became more severe, and was distinctly referred to the occiput and upper part of the neck. He had generally a remission of it through the day, and aggravation in the evening. In the spring of 1828, the symptoms increased in severity, but he received considerable relief from blistering. In the summer he went to the country, where his general health was much improved, and the headache greatly mitigated. He continued in this improved state till May, 1829, when the attacks of headache were again aggravated, accompanied by giddiness, and on one occasion he fell from his chair. In October of the same year, he began to be affected with a most distressing sense of throbbing, referred to the back of the head, and he was also annoyed with frequent vomiting, which continued without intermission for three weeks. The paroxysms of headache were now aggravated to an intense degree of severity; they occurred chiefly in the evening, from six o'clock till midnight, but also at other times of the day. During the more severe attacks his face was flushed,—the blood-vessels in the temples were remarkably distended,—and he lay unable to speak, in a state bordering upon total unconsciousness, and with his hands and arms spasmodically contracted. He still had occasional vomiting, and intense acidity of the stomach,—and several times he mentioned double vision. His pulse was generally natural; bowels very obstinate.

His state was now considered as nearly hopeless; and no relief was obtained from any kind of treatment. But after five or six weeks of the most intense suffering, the symptoms gradually remitted, and during several weeks in December and January, he continued almost free from headache,—he was able to walk out, and his general health was greatly improved. In February, 1830, the symptoms again increased, but the pain was now chiefly complained of above the eyes. The remissions also were more complete, and, upon the whole, his sufferings were less severe than during the former attack. In March his complaints again subsided; and he was able to take a good deal of exercise in the open air, and even to attend to his business. He had still occasional attacks of headache, but they were not severe, and his condition was considered as much more favorable than it had been for a long time. In the middle of April the paroxysms of headache became more severe, but by no means in the degree in which they had occurred on former occasions. He was not confined, and no degree of apprehension was excited until the 24th, when, in one of the paroxysms, he suddenly expired.

Inspection.—The ventricles of the brain contained from three to four ounces of limpid fluid, but the cerebral substance was entirely healthy. Imbedded in the left lobe of the *cerebellum*, there was a tumor, the shape and size of a very small walnut. Externally it was firm, and presented the usual appearance of the scrofulous tubercle. Internally it was softened, with the usual appearance of unhealthy scrofulous suppuration. The substance of the *cerebellum* around it was entirely healthy. All the other viscera were sound.

It is unnecessary to point out the remarkable features presented by this case—the extraordinary remission in the symptoms, the periodical character of the paroxysms even at the time of their most intense severity,—the long interval of comparative health which preceded the final attack,—and the very sudden nature of the fatal termination,—we may add, the healthy state of the whole cerebral substance, after such protracted suffering.—*Edinburgh Med. and Sur. Journal, Oct.* 1834.

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9. *Opium in Peritonitis.*—Dr. G. Hamilton says he has frequently had occasion to verify the remark he has heard made by Dr. Alison, that in peritonitis, opiates are often the best purgatives.—evidently because they subdue the inflammation, and allow the bowels to resume their accustomed action.*—*Edinburgh Med. and Surg. Journal, October*, 1834.

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10. *Arsenic in Cutaneous Diseases.* By JOHN TWAITS, M.D.—The chief inquiry now before us is, at what period of the disease, and under what circumstances, may this medicine be used; and when should it be withheld? The reply, as far as I am capable of giving it, shall be as concise as I can make it. In the forms of cutaneous disease in which the practitioner may feel disposed to employ it, the most favorable time for its exhibition is the latter stages, when the violence of the attack is subdued either by extensive depletion, or by the exhausting efforts of time. In recent affections, its use must be deprecated. In cases where there may exist thoracic or cerebral disease, it is highly dangerous, until these have been completely subdued. Its beneficial effects are most speedily perceptible in that class of skin disease

* On this subject, see also Gooch on the Diseases of Females.

which resolves itself most speedily, *i. e.* where the local inflammation most speedily terminates in the cutaneous deposition.

It may be asked, how is it that arsenic is so useful? Setting aside its specific powers, which some assert that it possesses, it appears to me to act in a very simple as well as effectual way. It may be considered, that in all parts where inflammation existed, upon the resolution of that state, there is left behind a degree of consequent debility. This is always proportioned to the extent of disease. When, therefore, we have a large surface of inflammation, as in the majority of cutaneous diseases, we must calculate upon the corresponding reduction, not only in the powers of the constitution, but in the vital energy of *the parts attacked*. Upon the removal of the disease, such means, therefore, must be employed as will restore the strength of the system, and yet not over stimulate. We have this remedy fully within our reach here; as, by the command which we possess over its exhibition, we can regulate it at pleasure. There is no occasion for overloading the digestive organs with a quantity of medicine, and consequently aggravating the evil, as in the use of the decoction of sarsaparilla, infusion of bark in lime-water, and various other remedies, which by their quantity annihilate their own beneficial properties. The tone which the stomach receives by the application of this medicine is communicated to the external surface, while a stimulus is given to the heart's action, which gives it an *equalized* and healthy energy, tending considerably to promote the advancement of general health. May not this stimulus be likewise communicated to the absorbent system, and then produce a species of operation mainly contributing to the cure?—*Ibid.*

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11. *Dyspnœa.* By Thomas Davies, M.D.—What is the value of the sign of dyspnœa? In one sense it has no value; in another it is of the highest importance. Dyspnœa will never determine what is the nature of the lesion; it will not determine whether the lungs be affected, or the heart, for you see it is common to them both; it is common to every disease of the lungs, and to a certain extent to every disease of the heart; and therefore it is an *equivocal* sign;—nay, it even occurs in diseases that are placed out of the cavity of the chest—in dropsy, and even in pregnancy, and therefore I say it is of no value in determining a specific lesion. But it is of the highest importance in a practical point of view, in determining the degree of the loss of equilibrium, and therefore gives the most valuable indications.—*London Medical Gazette, November*, 1834.

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12. *Case of Exanthema and Narcotism, from the external application of Hops.* By John Badham, M.D.—Mary Bell, æt. 14, and of a healthy habit of body, applied for advice, on the 26th of September last, for symptoms which, although on the decline, appeared to me even then of a sufficiently interesting character to deserve being detailed in my case-book; and as I have not been able to find a case of the kind recorded by any author, English or foreign, I shall be glad to hear whether any of your correspondents have, in the course of their practice, met with a similar one. This little girl had been engaged in hop-picking for a week, during which she was in the enjoyment of perfect health.

On the morning of the 24th, there being a sharp frost at the time, her hands became chapped, and she put them into the hop-bin to warm them.

Shortly after this, she began to feel a tingling or smarting sensation in the hands, as if she had been stung by nettles; and having frequent occasion to pass her hands over her forehead, to arrange her hair, the face became similarly affected. In a few hours afterwards, a distinct cuticular efflorescence appeared, accompanied with a strong disposition to sleep. When taken home, the feeling of somnolency was such as to require the constant vigilance of the family to keep her awake. Her vision was so much impaired that she could not distinguish between objects the most dissimilar; a plate of eels, for instance, appeared like mushrooms. Towards evening all efforts at rousing her attention failed, and she fell into a profound slumber. In the morning her face was covered with a deep erythema, and had swelled extensively; her eyes were quite closed by the tumefaction of the eyelids. She slept substantially through the whole of that day, but once or twice complained of pain in the forehead. Opening medicines were administered, but failed in procuring a stool. On the evening of this day the hands and face were literally covered with vesicles, some of considerable, some of lesser size, which, continuing to grow larger, at length began to burst, first in the hands, then in the face. After this a considerable mitigation in all the symptoms took place; the face became reduced in size, and a healthy desquamation soon followed. The eyes, which had suffered from the attack, though less inflamed, were still red, on the fourth day, when she presented herself to me; and there was also an appearance of *small scales* on the face and forehead; elsewhere the desquamation was general; the erythema was dying away, but a thin ichorous discharge kept oozing from small abraded patches between the fingers. She still had headache, and appeared heavy, but was evidently convalescing without medicine: however, as her bowels were confined, I gave her saline purgatives, with the addition of a little nitre and sulphur, and ordered the hands to be dusted with some absorbent powder. These means; with the additional aid of a dose of calomel and colccynth, completed the cure which had already been commenced by nature.

The interest of this case appears to consist, first, in its appearing to prove the physiological fact of cutaneous absorption; and, secondly, because it discovers a new and hitherto unsuspected acrid principle in the hop.—*Ib.*

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13. *Experiments relative to the Sense of Taste.* By Mr. Noble.—Mrs. Williams, about 50 years of age, 22, Pot street, Ancotas, Manchester, states, that some years ago she had two or three leeches applied to the left temple, near the outer canthus of the left eye, when, in a day or two afterwards, violent neuralgic pains ensued upon the left half of the face; these gradually subsided, and left almost complete amaurosis, and paralysis of sensation on the affected side of the head and face, as supplied by the branches of the fifth nerve; the function of voluntary motion remaining perfect as before. In this state she continues at the present time.

There is a peculiarity in this case to which I would particularly allude, in the fact of the sense of taste being unimpaired in the left half of the tongue, whilst its common sensibility is all but destroyed. The impressions of common tact, of pain, of the rough or the smooth, of heat or of cold, she is all but insensible; whilst to impressions of the bitter or the sweet, or any other modification of the sense of taste, she is as acutely alive on the affected as on

the sound half of the tongue. For example, if she be blindfolded, and directed to protrude the tongue, and the blade of a knife be placed upon the lingual surface traversely, she feels it only on the sound side, or at least her perception on the affected side is of the most obscure description, being, as she words it, a "numb, dead feel." A portion of the mucous membrane on the affected side was lacerated with a point of a lancet, and she felt not the slighest pain—all, in her own words, being "numb and dead." The blade of a knife was introduced into hot water, and then placed traversely upon the tongue: she had only the perception of heat on the sound side. Small portions of common salt were sprinkled upon the affected side, and similar quantities of sugar on the other: she was insensible to the fall of the particles on the affected side. In a few seconds, however, when the sapid particles had partially dissolved, she was as acutely alive to the saline taste on the affected half as to the saccharine on the other; and the sensation of taste was excited at the same distance of time from the first contact of the sapid ingredient on both sides of the tongue. These experiments were modified in a variety of ways, the woman always being blindfolded, and in ignorance of the exact procedure, or its intention; and in whatever way the trial was varied, it was obvious that whilst the common sensation of one half of the tongue was in effect annihilated, the sense of taste was unimpaired.

Does not the above case decide that taste is something more than a modification of common sensation? And if so, must it not, as in the case of smell, be dependent upon a specific nervous supply? And as a variety of facts shew clearly that the "true gustatory nerve" conveys both common and specific sensibility to the tongue, must it not be a compound nerve?

What is the function of the nerve from Meckel's ganglion, called *chorda tympani*, which joins the branch that goes to the tongue from the Gasserian ganglion?—of which nerve that distinguished neurologist, Mr. Swan, observes, "it is supposed that the chord of the tympanum does not unite with the gustatory, but passes in mere contact with this; but if a preparation that has been kept in spirits be carefully examined with a magnifying glass, and at the same time an attempt be made to disunite these nerves, it will be found that the filaments of both are intermixed, and cannot be separated without violence."

And in conclusion,—what is the function of the branches from Meckel's ganglion distributed to the soft palate?—*Ib.*

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14. *Radical cure of Hernia in Infants.*—M. Meynier adopts the following treatment for the cure of umbilical hernia in new-born infants.—After returning the hernia he retains it with one or two fingers, and applies a square piece of spread diachylon plaster larger than the tumor. Over this is put a small thick compress, which is secured by a long strap of the same plaster. The middle of this strap is fixed on the compress and its heads passed twice or three times round the body to enclose the hernia completely. The first dressing may remain on six weeks. *M. Meynier* has sometimes found a single application of it complete a cure. It is occasionally necessary to renew the dressing twice, seldom three times.—*Journal des Connaissances Medico-Chirurgical, Decembre*, 1834.

15. *Larvæ of Flies passed alive from the Bladder.*—An individual completely paralyzed, by an affection of the spinal marrow, passed with his urine a large quantity of larvæ. Dr. Wolff, the reporter of the fact, satisfied himself there was no deception. On a *post mortem* examination, forty-eight hours after death the bladder was found healthy. There was no abscess, no fistulous passage. Schrader and Bremser have described analogous cases.—*Medizinche Zeitung.—Journal des Connaissances Med. Chirur. Août*, 1834.

16. *Extract of Belladona as an external application for irreducible Hernia.* M. Jofere reports a distressing case of strangulated inguinal hernia which he relieved by this means, after failing with taxis. The neck of the tumor was rubbed with the extract diluted with a little water. In less than an hour and a half the relaxation produced by the belladona was such that the hernia was easily reduced. M. Jofere recommends this article as an application for facial neuralgia, and spasms, accompanied with pains, of the epigastrium and hypochondrium.—*Journal des Connaissances Med. Chir. Août*, 1834.

17. *Displacement of one of the semilunar Cartilages of the Knee-Joint.*—Dr. Reid exhibited a specimen of displacement which seemed to correspond to the affection of the knee-joint described by Mr. Hey, under the title of Internal Derangement of the Knee-Joint, and by Sir Astley Cooper, in his Surgical Essays, under that of Partial Luxation of the Thigh-Bone, from the Semilunar Cartilages; but no dissections are given by either of these two surgeons.

The fibrous tissue connecting the outer margin of the external semilunar cartilage to the edge of the head of the tibia was torn through in its anterior half, and the semilunar cartilage was found thrown inwards and backwards, and placed between the spine of the tibia, posterior crucial ligament, and posterior ligament of Winslow. The transverse ligament was entire. The cartilage itself was considerably flattened and broader, and the remaining portion of the fibrous tissue, connecting its outer margin to the tibia, was much thickened, and had assumed somewhat of a fibro-cartilaginous appearance. The cartilage of incrustation on the anterior part of the tibia, which had been exposed to the free motion of the condyle of the femur, had become rough. The motions of the articulations seemed sufficiently free, as far as could be judged of in the dead body; but it can easily be perceived that when the connecting parts are less extensively torn than in the present case, or when the posterior ligament has been rendered tense by the action of the muscles in walking, that the cartilage may be forced between the condyle and spine of the tibia, producing the same effects as the presence of a loose cartilage within the the joint. The history of the case could not be traced. The man died in the Infirmary, and while there never complained of his knee, nor did the nurse remember to have observed any limp in his walk.—*Report of Cases communicated to the Anatomical Society of Edinburgh.*

Notices and Acknowledgments.

We take this opportunity to inform Dr. Pearson, that his communication will be thankfully received. *Medicus Marylandicus* we must decline. The evil is a deep one, but is only remediable by time; any thing we could publish through our pages would only increase it.

We have to acknowledge the following works for the month:

The American Cyclopedia of Practical Medicine and Surgery, a digest of Medical Literature, Part VI. edited by Isaac Hays, M.D. Surgeon to Wills' Hospital, &c. Philadelphia, Carey, Lea and Blanchard, January, 1835.—(*From the publishers.*)

The high character which this work has already established, is fully sustained in the present number. We shall notice it in our next.

Introductory Lecture on the Climate and Salubrity of New Orleans, and its suitability for a Medical School. By Edward H. Barton, M.D. Professor of Materia Medica, Therapeutics and Hygiène. Published at the request of the Faculty. (From the author.) *An able lecture, containing much valuable information.*

A Catalogue of the Officers and Students of Dartmouth College, Oct. 1834.

Journal des Connaissances Medico-Chirurgicales, for Janvier, 1835. (In exchange.)

The American Journal of the Medical Sciences, for February, 1835. (In exchange.)

The Boston Medical Magazine, Nos. XIII and XIV. for February, 1835. (In exchange.)

The Boston Medical and Surgical Journal, Nos. 2 & 3, for February, 1835. (In exchange.)

The United States Medical and Surgical Journal, for February, 1835. (In exchange.)

The Western Journal of Medical and Physical Sciences, for January, 1835. (In exchange.)

The Western Medical Gazette, for January, 1835. (In exchange.)

A Short Account of the occurrences which led to the removal of Dr. John Redman Coxe, from the chair of Materia Medica and Pharmacy, in the University of Pennsylvania. (From the author.)

☞ The title page and index of the first volume, which this number completes, will be published with our next.

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